Environmental Performance Reviews Series No. 53

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ECE/CEP/189

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<td>Team leader</td>
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<td>ASRO</td>
<td>National Standardization Body</td>
</tr>
<tr>
<td>BAT</td>
<td>Best Available Techniques</td>
</tr>
<tr>
<td>BEP</td>
<td>Best Environmental Practices</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biological Diversity</td>
</tr>
<tr>
<td>CITES</td>
<td>Convention on International Trade in Endangered Species of Wild Fauna and Flora</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification, Labelling and Packaging</td>
</tr>
<tr>
<td>CMS</td>
<td>Convention on the Conservation of Migratory Species of Wild Animals</td>
</tr>
<tr>
<td>CSR</td>
<td>Corporate social responsibility</td>
</tr>
<tr>
<td>DDBRA</td>
<td>Danube Delta Biosphere Reserve Administration</td>
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<tr>
<td>EC</td>
<td>European Commission</td>
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<tr>
<td>ECE</td>
<td>United Nations Economic Commission for Europe</td>
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<tr>
<td>EEA</td>
<td>European Environment Agency</td>
</tr>
<tr>
<td>EEE</td>
<td>Electrical and electronic equipment</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental impact assessment</td>
</tr>
<tr>
<td>EMAS</td>
<td>Eco-Management and Audit Scheme</td>
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<tr>
<td>EMEP</td>
<td>European Monitoring and Evaluation Programme</td>
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<td>EMS</td>
<td>Environmental Management Systems</td>
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<td>EPR</td>
<td>Environmental Performance Review</td>
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<td>ESI Funds</td>
<td>European Structural and Investment Funds</td>
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<td>ETS</td>
<td>Emissions Trading System</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>FDI</td>
<td>Foreign direct investment</td>
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<tr>
<td>GC</td>
<td>Green certificate</td>
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<tr>
<td>GD</td>
<td>Government Decision</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>GEO</td>
<td>Government Emergency Ordinance</td>
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<tr>
<td>GHG</td>
<td>Greenhouse gas</td>
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<tr>
<td>GMO</td>
<td>Genetically modified organism</td>
</tr>
<tr>
<td>IBA</td>
<td>Important bird area</td>
</tr>
<tr>
<td>ICPDR</td>
<td>International Commission for the Protection of the Danube River</td>
</tr>
<tr>
<td>IDA</td>
<td>Intercommunity Development Associations</td>
</tr>
<tr>
<td>IED</td>
<td>Industrial Emissions Directive</td>
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<tr>
<td>LCP</td>
<td>Large Combustion Plant</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>IRR</td>
<td>Informative Inventory Report</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
</tr>
<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
</tr>
<tr>
<td>LEPA</td>
<td>Local environment protection agency</td>
</tr>
<tr>
<td>LULUCF</td>
<td>Land Use, Land-Use Change and Forestry</td>
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<tr>
<td>MEA</td>
<td>Multilateral environmental agreement</td>
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<tr>
<td>MO</td>
<td>Ministerial Order</td>
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<tr>
<td>MoU</td>
<td>Memorandum of understanding</td>
</tr>
<tr>
<td>MSW</td>
<td>Municipal solid waste</td>
</tr>
<tr>
<td>NANPA</td>
<td>National Agency for Natural Protected Areas</td>
</tr>
<tr>
<td>NBSAP</td>
<td>National Biodiversity Strategy and Action Plan</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Protection Agency</td>
</tr>
<tr>
<td>NEG</td>
<td>National Environmental Guard</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<tr>
<td>NMVOC</td>
<td>Non-methylene volatile organic compound</td>
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<td>NWMP</td>
<td>National Waste Management Plan</td>
</tr>
<tr>
<td>ODA</td>
<td>Official development assistance</td>
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<tr>
<td>ODS</td>
<td>Ozone-depleting substance</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>OSCE</td>
<td>Organization for Security and Co-operation in Europe</td>
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<tr>
<td>PCB</td>
<td>Polychlorinated biphenyl</td>
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<tr>
<td>POP</td>
<td>Persistent organic pollutant</td>
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<tr>
<td>PM</td>
<td>Particulate matter</td>
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<tr>
<td>PPP</td>
<td>Public-private partnership</td>
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<tr>
<td>PRTR</td>
<td>Pollutant release and transfer register</td>
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<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>---------</td>
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<tr>
<td>RBMP</td>
<td>River Basin Management Plan</td>
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<tr>
<td>RENARD</td>
<td>Romanian Accreditation Association</td>
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<tr>
<td>REPA</td>
<td>regional environment protection agency</td>
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<tr>
<td>RES</td>
<td>renewable energy source(s)</td>
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<td>Romsilva</td>
<td>National Forests Administration “Romsilva”</td>
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<tr>
<td>SAICM</td>
<td>Strategic Approach to International Chemicals Management</td>
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<tr>
<td>SEA</td>
<td>strategic environmental assessment</td>
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<tr>
<td>SEIS</td>
<td>Shared Environmental Information System</td>
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<tr>
<td>SMEs</td>
<td>small and medium-sized enterprises</td>
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<td>SWIMS</td>
<td>solid waste integrated management system</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>WEEE</td>
<td>waste electrical and electronic equipment</td>
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<td>WHO</td>
<td>World Health Organization</td>
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</table>

**SIGNS AND MEASURES**

- ..: not available
- -: nil or negligible
- .: decimal point
- €: euro
- US$: United States dollar
- cap: capita
- eq.: equivalent
- g: gram
- Gg: gigagram
- GWh: gigawatt-hour
- ha: hectare
- kg: kilogram
- km: kilometre
- km²: square kilometre
- kt: kiloton
- kW: kilowatt
- kWh: kilowatt-hour
- l: litre
- m: metre
- m²: square metre
- m³: cubic metre
- Mg: megagram
- MW: megawatt
- t: ton (1,000 kg)
- µg/m³: microgram / cubic metre
### CURRENCY CONVERSION

Exchange rate (period average)

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<td>2011</td>
<td>4.24</td>
<td>3.05</td>
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<tr>
<td>2012</td>
<td>4.46</td>
<td>3.47</td>
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<tr>
<td>2013</td>
<td>4.42</td>
<td>3.33</td>
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<td>2014</td>
<td>4.44</td>
<td>3.35</td>
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<td>2015</td>
<td>4.45</td>
<td>4.01</td>
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<tr>
<td>2016</td>
<td>4.49</td>
<td>4.06</td>
</tr>
<tr>
<td>2017</td>
<td>4.57</td>
<td>4.05</td>
</tr>
<tr>
<td>2018</td>
<td>4.65</td>
<td>3.94</td>
</tr>
<tr>
<td>2019</td>
<td>4.75</td>
<td>4.24</td>
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*Source: ECE Statistical database. Accessed 16.2.2020*
Executive summary

Sustainable Development Goals
INTRODUCTION

1 Physical context

Romania is situated in the south-eastern part of central Europe. It has a land area of 238,391 km², of which approximately 8,500 km² are bodies of water. The total border length is 2,508 km. Romania shares its border with Bulgaria (border length 608 km) to the south, with Serbia (476 km) to the east, Hungary (443 km) to the north, Ukraine to the north (362 km) and to the east (169 km), and to the north east with the Republic of Moldova (450 km). Romania also has 247 km Black Sea coastline to the east of the country.

The Carpathian Arch, the eastern part of Europe’s central mountain system traverses Romania. The highest peaks of the Romanian Carpathians are Moldoveanu Peak at 2,544 m and Negoiu Peak at 2,535 m. The terrain of the country is almost evenly divided between mountains, hills and plains, each covering about 30 per cent of its total surface area.

Romania is characterized by a temperate-continental climate. The Carpathian Mountains function as a barrier to the Atlantic air masses, confining their oceanic influences to the west and centre of the country, and keeping the continental climate influences of the east European plain to the north. Generally, the winters are cold and cloudy with frequent snow and fog, and the summers are sunny with frequent showers and thunderstorms.

The average annual precipitation is between 600 mm and 700 mm, with high 1,000 mm to 1,400 mm rainfall in mountainous areas and low, below 400 mm, rainfall in the coastal areas. The average annual temperature is 11°C in the south, and 7°C in the north.

Out of the 2,587 km total length of the Danube River, 1,075 km run within Romania’s borders, making it the country’s largest river. Other important rivers, all part of the Danube’s water system, are the Mures River (length 766 km), the Prut River (742 km), the Olt River (615 km), and the Siret River (571 km). There are around 3,500 lakes in Romania, of which many are small, freshwater mountain lakes.

2 Demographic and social contexts

Since 1989, Romania’s total population has generally had a declining trend. In 2010 Romania had 20.2 million inhabitants which had diminished to 19.5 million in 2019. The 2019 population density was 81.6 inhabitants per km². The share of rural population in 2018 was 46.0 per cent and the urban population at 54.0 per cent. The capital, Bucharest, was a home to approximately 2.106 million people in 2016.

According to the 2019 OECD Study on Talent Abroad: A Review of Romanian Emigrants, the outward migration has caused about 75 per cent of the Romania’s population decline. The decrease in the number of births, combined with rising death rate is the source for the residual decline. In 2018 the birth rate was 9.6 births per 1,000 population, and the death rate 13.5 deaths per 1,000 population. Meanwhile, life expectancy is growing, and the proportion of citizens over 65 years reached 18.0 per cent of the population in 2017. The infant mortality rate has continued its positive long-term diminishing trend and dropped to 7.2 per 1,000 live births in 2017.

The human development is measured by the UNDP’s Human Development Index (HDI) which combines several indicators such as the life expectancy, educational attainment and income into an index, expressed as a value between 0 and 1, where a higher value indicates a better development. In 2010 Romania still belonged to the group of countries having high human development but in 2018 country had advanced to the group of countries having very high human development. Romania’s HDI in 2018 was 0.816 which ranked Romania the fifty-second out of the 189 countries with comparable data, while the neighbouring Bulgaria, Ukraine and Republic of Moldova ranked 50, 88 and 107 respectively.

The 2012 second Environmental Performance Review (EPR) of Romania noted that country’s overall standard of living had improved over the review period from 2000 to 2011 when the real GDP per capita rose by nearly 60 per cent. The growth has continued since the second review. Between 2010 and 2018 the real GDP per capita increased by 40.06 per cent bringing the average Romanian living standard closer to the EU-28 level. In 2010 the
GDP per capita at purchasing power parities corresponded to 59.06 per cent of the EU-28 GDP per capita, while in 2017 figure was 72.47 per cent.

Table 1: Demographic indicators, 2010–2019

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</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>20.2</td>
<td>20.1</td>
<td>20.1</td>
<td>20.0</td>
<td>19.9</td>
<td>19.8</td>
<td>19.7</td>
<td>19.6</td>
<td>19.5</td>
<td>19.5*</td>
</tr>
<tr>
<td>Birth rate, crude (per 1,000) *</td>
<td>10.5</td>
<td>9.7</td>
<td>10.0</td>
<td>9.4</td>
<td>10.0</td>
<td>10.2</td>
<td>10.4</td>
<td>10.3</td>
<td>9.6</td>
<td>...</td>
</tr>
</tbody>
</table>
| Total fertility rate    | 1.6  | 1.5  | 1.5  | 1.5  | 1.6  | 1.6  | 1.6  | 1.7  | 1.7   | 1.8  | ...
| Life expectancy at birth (years)* | 73.7 | 74.4 | 74.4 | 75.1 | 75.0 | 74.9 | 75.2 | 75.3 | 75.3  | ...
| Life expectancy at birth: female (years)* | 77.7 | 78.2 | 78.1 | 78.7 | 78.7 | 78.6 | 79.0 | 79.1 | 79.2  | ...
| Life expectancy at birth: male (years)* | 70.0 | 70.8 | 70.9 | 71.6 | 71.3 | 71.4 | 71.6 | 71.7 | 71.7  | ...
| Population under 15 years old (%) | 15.8 | 15.8 | 15.8 | 15.6 | 15.5 | 15.5 | 15.5 | 15.6 | 15.7  | ...
| Population above 65 years old (%) | 16.1 | 16.1 | 16.2 | 16.4 | 16.7 | 17.2 | 17.6 | 18.0 | 18.4  | ...
| Death rate, crude (per 1,000 people) | 11.5 | 11.2 | 12.6 | 12.4 | 12.8 | 13.2 | 13.1 | 13.3 | 13.5  | ...
| Mortality rate, infant (per 1,000 live births) | 9.8  | 9.4  | 10.0 | 8.9  | 8.2  | 7.5  | 7.0  | 7.2  | ...   | ...

Sources: ECE database, April 2020 and * World Bank October 2019.

Despite improvements in per capita income and living standards problems persist with poverty and social exclusion. Romania ranked 26th out of 28 EU country living standard comparison in 2017 – same as in 2010 but while in 2010 41.4 per cent of the population and 8.8 million people were in risk of poverty and exclusion these figures had diminished to 35.7 per cent and 6.9 million people in 2017.

According to Eurostat, the inequality level of Romania in 2017, was 7 i.e. that the top 20 per cent of population earned 7 times more that the bottom 20 per cent. The child poverty is at all-time high. A 2019 Save the Children Global Childhood Report mentioned that about 21.5 per cent of Romanian children live in severe material deprivation, the highest rate in the European Union (EU) which has an average of 5.9 per cent. Moreover, 32 per cent of Romania’s children live below the poverty line. Poverty is worst in rural areas. About 46.0 per cent of population lives in rural areas and about 70 per cent of this population lives in poverty.

In 2011 about 10.5 per cent of Romania's population belonged to the minorities while the rest 89.5 per cent were Romanians. Romania has 19 different minorities, but just two of these groups the Hungarians and Roma(ni) constitute 88.3 per cent of country’s minority population and 9.18 per cent of the total population of Romania. Locally the minority populations groups are largest in Transylvania and the Banat, situated in the north and west of the country.

In 2002 the size of Hungarian population was about 1.5 million, but it had diminished to 1.3 million by 2011. Although Hungarians are country wide minority there are few counties such as Harghita and Covasna counties, where Hungarians form a majority of the population (84.8 and 73.6 per cent respectively). For the Hungarian population the important issues are related to cultural identity, language and possibility of local self-governance. Their demands are largely intended to preserve their cultural identity — the ability to use their own language in education, have a local administrative autonomy or express their identity with their own flags. Although the Romanian Hungarians have clearly stated that regional autonomy would not violate territorial unity or sovereignty or Romania their demands for more autonomy has never attracted much support from Bucharest.

The problems and issues of Roma population are much more varied than the issues for Hungarian minority. They are related to education, vocational prospects, unemployment, health, and poverty issues. The estimations regarding the number of Romanian citizens belonging to the Roma population vary a lot. In the 2011 population and housing census 621,573 Romanian citizens declared to be Roma, which represented 3.3 per cent of a total population but the Council of Europe has used much higher figure of 1,850,000 Roma citizens, while the World Bank estimated the number of Roma people to be not more than one million.

About 63 per cent of the people who declared themselves as Roma live in the rural areas and only 39.3 per cent of those who declared to be Roma at the census, declared their main language as the Romani language.
There is an educational attainment gap between Roma and non-Roma population. The illiteracy rate of Roma is much higher than that of other population groups. The illiteracy of Roma population aged 10 or above was 14.1 per cent. Out of the same age group of Romanians only 1.0 were illiterate and for Hungarians the illiteracy rate was 0.8 per cent. Educational attainment differences continue to the higher education. Only 0.7 per cent of Roma population has higher education while 14.8 per cent of Romanians and 10.2 per cent of Hungarians has it.

The lower than the majority population’s educational level, limits Roma minority access to the labor market. In 2011 the employment rate for Roma people was 36.3 per cent, whereas the same rate for non-Roma population was 58.5 per cent. The unemployment rate at the same year for Roma minority was 48.6 per cent, much higher elevated figure than the 7.4 per cent national unemployment rate.

There are economic disparities between Roma population and non-Roma population. In 2011, three out of four people belonging to the Roma population were suffering from relative poverty, whereas only one out of four non-Roma population were in a similar situation. The absolute poverty rate is at least four times higher for the Roma minority than for the non-Roma population (54 per cent for Roma vs. 13 per cent for non-Roma).

The precarious socio-economic conditions and the low educational level, together with the access barriers to health services, have had an impact on the health of Roma population. The maternal mortality among Roma women is 15 times higher than the national average. The mortality for Roma children aged 0-1 year is 4 times higher than the national average. About half (45.7 population) of the Roma children do not receive free vaccination made available by the Ministry of Health through the National Immunization Programme, either because of refusal of vaccination, or of lack of mothers’ information or education, or of shortcomings in the primary healthcare services.

3 Economic context

Since year 2000 Romania has experienced an economic expansion, and according to the World Bank it now is an upper middle-income country. GDP increased from US$376.9 billion in year 2010 to US$511.7 billion in 2018, a 35.7 per cent growth in eight years.

The inflation rate, measured by consumer price index, which was very high 45.7 per cent in 2000, fell down to 6.1 per cent in 2010. After 2010 inflation continued to diminish and even went negative of 0.6 per cent in 2015 after which it increased to 3.9 per cent in 2019.

Continuous GDP growth and low inflation have influenced the country’s unemployment. The unemployment rate as per cent of the total labour force, which was 7.0 per cent in 2010 then hovered around 7 per cent for five years and started to decrease in 2016 finally diminishing to 3.9 per cent in 2019.

Before 2010 the foreign direct investments (FDIs) into the country fluctuated wildly, but since then the annual figures have been positive and despite the small decrease of the annual FDIs in 2014 and 2015 the trend has generally been upwards. The size of the annual FDIs into Romania during the review period almost doubled. The 2010 inflow of almost US$3 billion in FDIs increased to US$5.8 billion in 2018.


The export volume of goods and services more than doubled from US$122.1 million in 2010 to US$249.0 million in 2018 - a fact resulting from a more diversified exports country offers. The export of goods and services amounted from 32.4 per cent of GDP in 2010 to 41.6 per cent in 2018. In 2019 the top three exports categories were: electrical machinery 17.7 per cent; vehicles 17.0 per cent and machinery including computers 11.3 per cent.
### Table 2: Selected economic indicators, 2010–2019

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</thead>
<tbody>
<tr>
<td><strong>GDP Growth rate, at prices and PPPs of 2010 (% change over previous year)</strong></td>
<td>-3.9</td>
<td>2.0</td>
<td>2.1</td>
<td>3.5</td>
<td>3.4</td>
<td>3.9</td>
<td>4.8</td>
<td>7.1</td>
<td>4.0</td>
<td>..</td>
</tr>
<tr>
<td><em><em>GDP at current prices (millions of NCUs</em>)</em>*</td>
<td>528,247.0</td>
<td>559,245.0</td>
<td>593,743.0</td>
<td>635,459.0</td>
<td>668,590.0</td>
<td>712,588.0</td>
<td>765,135.0</td>
<td>857,896.0</td>
<td>944,220.0</td>
<td>..</td>
</tr>
<tr>
<td><strong>GDP per capita at current prices (NCUs)</strong></td>
<td>26,090.0</td>
<td>27,757.0</td>
<td>29,598.0</td>
<td>31,791.0</td>
<td>33,570.0</td>
<td>35,954.0</td>
<td>38,826.0</td>
<td>43,789.0</td>
<td>48,346.0</td>
<td>..</td>
</tr>
<tr>
<td><strong>GDP at current prices and PPPs (US$ million)</strong></td>
<td>343,518.0</td>
<td>360,795.0</td>
<td>379,728.0</td>
<td>395,624.0</td>
<td>410,590.0</td>
<td>428,645.0</td>
<td>470,258.0</td>
<td>521,649.0</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td><strong>GDP per capita at current prices and PPPs (US$)</strong></td>
<td>16,967.0</td>
<td>17,908.0</td>
<td>18,929.0</td>
<td>19,792.0</td>
<td>20,616.0</td>
<td>21,627.0</td>
<td>23,863.0</td>
<td>26,626.0</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td><strong>GDP at prices and PPPs of 2010 (US$ millions)</strong></td>
<td>376,975.0</td>
<td>384,541.0</td>
<td>392,529.0</td>
<td>406,325.0</td>
<td>420,184.0</td>
<td>436,451.0</td>
<td>457,404.0</td>
<td>489,932.0</td>
<td>509,303.0</td>
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</tr>
<tr>
<td><strong>GDP per Capita at Prices and PPPs of 2010 (US$)</strong></td>
<td>18,619.0</td>
<td>19,086.0</td>
<td>19,568.0</td>
<td>20,328.0</td>
<td>21,097.0</td>
<td>22,021.0</td>
<td>23,211.0</td>
<td>25,007.0</td>
<td>26,077.0</td>
<td>..</td>
</tr>
<tr>
<td><strong>Inflation, GDP deflator (% change over the previous year)</strong></td>
<td>6.0</td>
<td>8.1</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
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<tr>
<td><strong>Consumer price index, (% change over the previous year)</strong></td>
<td>6.1</td>
<td>5.8</td>
<td>3.3</td>
<td>4.0</td>
<td>1.1</td>
<td>-0.6</td>
<td>-1.6</td>
<td>1.3</td>
<td>4.6</td>
<td>..</td>
</tr>
<tr>
<td><strong>PPI (% change over the previous year)</strong></td>
<td>4.0</td>
<td>6.6</td>
<td>4.8</td>
<td>3.7</td>
<td>0.2</td>
<td>-1.8</td>
<td>-2.6</td>
<td>3.1</td>
<td>5.2</td>
<td>..</td>
</tr>
<tr>
<td><strong>Registered unemployment (% of labour force, end of period)</strong></td>
<td>7.0</td>
<td>7.2</td>
<td>6.8</td>
<td>7.1</td>
<td>6.8</td>
<td>6.8</td>
<td>5.9</td>
<td>4.9</td>
<td>4.2</td>
<td>..</td>
</tr>
<tr>
<td><strong>Current account balance (millions of NCUs)</strong></td>
<td>-26,961.5</td>
<td>-28,290.7</td>
<td>-28,457.5</td>
<td>-6,910.2</td>
<td>-4,631.5</td>
<td>-6,158.8</td>
<td>-3,960.5</td>
<td>-6,754.9</td>
<td>-10,756.7</td>
<td>..</td>
</tr>
<tr>
<td><strong>Current account balance (US$ millions at current exchange rate)</strong></td>
<td>-8,478.5</td>
<td>-9,276.5</td>
<td>-8,200.1</td>
<td>-2,076.3</td>
<td>-1,382.8</td>
<td>-2,155.8</td>
<td>-3,960.5</td>
<td>-6,754.9</td>
<td>-10,756.7</td>
<td>..</td>
</tr>
<tr>
<td><strong>Foreign Direct Investment (US$ million at current exchange rate)</strong></td>
<td>2,978.1</td>
<td>2,313.3</td>
<td>3,255.0</td>
<td>3,915.3</td>
<td>3,600.0</td>
<td>3,287.5</td>
<td>4,996.3</td>
<td>5,566.6</td>
<td>5,840.1</td>
<td>..</td>
</tr>
<tr>
<td><strong>Cumulative Foreign Direct Investment (US$ million at current exchange rate)</strong></td>
<td>65,438.0</td>
<td>67,751.3</td>
<td>71,006.3</td>
<td>74,921.6</td>
<td>78,521.6</td>
<td>81,809.1</td>
<td>86,805.4</td>
<td>92,371.9</td>
<td>98,212.0</td>
<td>..</td>
</tr>
<tr>
<td><strong>Foreign currency reserves (US$ million current exchange rate)</strong></td>
<td>122,869.0</td>
<td>139,067.3</td>
<td>129,662.4</td>
<td>133,960.6</td>
<td>129,239.7</td>
<td>105,089.4</td>
<td>104,322.2</td>
<td>110,044.8</td>
<td>117,962.0</td>
<td>..</td>
</tr>
<tr>
<td><strong>Gross external debt (US$ million)</strong></td>
<td>122,135.0</td>
<td>136,933.0</td>
<td>138,446.0</td>
<td>166,391.0</td>
<td>179,739.0</td>
<td>187,941.0</td>
<td>218,034.0</td>
<td>234,636.0</td>
<td>249,086.0</td>
<td>..</td>
</tr>
<tr>
<td><strong>Exports of goods and services (US$ million, at prices and PPPs of 2010)</strong></td>
<td>146,405.0</td>
<td>161,140.0</td>
<td>158,224.0</td>
<td>172,218.0</td>
<td>187,221.0</td>
<td>202,150.0</td>
<td>235,578.0</td>
<td>260,969.0</td>
<td>284,747.0</td>
<td>..</td>
</tr>
<tr>
<td><strong>Imports of goods and services (US$ million, at prices and PPPs of 2010)</strong></td>
<td>32.4</td>
<td>37.0</td>
<td>37.4</td>
<td>39.9</td>
<td>41.2</td>
<td>41.0</td>
<td>41.2</td>
<td>41.5</td>
<td>41.6</td>
<td>..</td>
</tr>
<tr>
<td><strong>Ratio of gross debt to exports (%)</strong></td>
<td>100.6</td>
<td>..</td>
<td>..</td>
<td>..</td>
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<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td><strong>Population (million)</strong></td>
<td>20.2</td>
<td>20.1</td>
<td>20.1</td>
<td>20.0</td>
<td>19.9</td>
<td>19.8</td>
<td>19.7</td>
<td>19.6</td>
<td>19.5</td>
<td>19.5</td>
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</table>

*Source: ECE database*

*NCU = National Currency Unit*
Romania accessed to the EU in 2007 and in 2019 its foreign trade is mainly oriented towards the EU. Intra-EU trade accounts for 77 per cent country’s exports. Main export partners are Germany (23 per cent), Italy (11 per cent) and France (7 per cent), while 3 per cent of country’s exports outside of the EU goes to Turkey and 2 per cent to the United States. Romania’s main export goods are machinery equipment, metal products, minerals, fuels, chemicals, textiles and agricultural products. The main imports are machinery and industrial products, simple processed goods, fuels and energy, and manufactured goods.

Regarding the imports the situation is similar. Romania imports 75 per cent of its imports from EU member countries (Germany 20 per cent, Italy 9 per cent and Hungary 7 per cent), while the main import partners outside of the EU China and Turkey provide 5 and 4 per cent of Romania’s imports, respectively.

The most important sectors of Romania’s economy in 2018 were industry (26.1 per cent), wholesale and retail trade, transport, accommodation and food services (20.2 per cent) and public administration, defence, education, human health and social work activities (14.5 per cent).

The Romanian currency Leu (lei in plural), subdivided into 100 bani (ban in singular), underwent a currency reform in July 2005. The goal of the reform was to stabilize the currency and prepare the country for the adoption of the euro. Between 2010 and 2019 Leu weakened 12.71 per cent against € and 33.31 per cent against USS. Romania’s accession agreement with EU requires Romania to replace the leu with the euro, as soon as country has fulfilled all of the four nominal euro convergence criteria as states in the Treaty of Functioning the European Union. According to the National Plan to Changeover to the Euro the scheduled date for euro adoption in Romania is 2024.

4 Gender

Romania has committed itself to several international obligations on gender issues. It ratified the Convention on the Elimination for of all Forms of Discrimination Against Women in 1982 and provided the Convention with the combined seventh and eighth Report in 2017. Romania also ratified, in 2016, the Council of Europe Convention on preventing and combating violence against women domestic violence. Country has been a member of the EU since 2007, and its labour legislation meets all EU laws and labour standards. In addition to that Romania has also ratified all International Labour Organization (ILO) conventions referred to in Fair Wear Foundation’s Code of Labour Practices except for the Minimum Wage-Fixing Machinery Convention, 1928 (No. 26) and Occupational Safety and Health Convention, 1981 (No. 155).

The National Legislation covers several important gender areas. The Constitution provides for protections for violence against women and girls and the Law No. 211/2004 protects victims from sexual violence. The Law No. 217/2003 on the prevention and fight against domestic violence, which covers both domestic violence and intimate partner violence, was revised in 2012, expanding the definition of violence as well as the rights of victims. The maternity leave is established in the Labour Code while under the Family Code, women and men have equal parental authority over children during marriage and following a divorce.

The National Strategy for the Promotion of Equal Opportunity and Treatment between Women and Men for 2018–2021 has three general objectives: firstly, promoting universal access for girls and women to sexual and reproductive health; secondly reconciliation of professional life with family and private life; and thirdly encouraging women’s participation to the decision making process.

There has been a mixed progress of the representation of women in country’s political life. In 2019 women held 19.8 per cent of the seats in the Romania Parliament - a figure which is below the EU27 average of 32.1 per cent. However, the number of female Parliament members had more than doubled since 2012 when only 9.9 per cent of MPs were women. With the position in the National government the development has been the opposite. In 2016 36.4 per cent of Government positions were held by women but in 2019 this has dropped to 17.6 per cent.

In 2019 women held 14.3 per cent of councillor seats in the councils of the 41 counties. Municipality level female representation was slightly smaller. The country has 3,188 municipal councils and in 2019 11.8 per cent of the seats were held by women.

In the EU Parliament 7 out of 32 Romanian MEPs were women in 2019.
In 2019 Romania ranked twenty-fifth on Gender Equality Index of European Institute of Gender Equality. Romania is progressing towards gender equality at a slower pace than other EU Member States. Its rank has dropped one place since 2005 and the scores are lower than the EU’s scores in all domains. Gender inequalities are most pronounced in the domain of power (38.8 points), time (50.3) and knowledge (51.5). In worldwide gender equality comparison Romania has done relatively well. In the 2019 UNDP Gender Inequality Index Romania belonged to the country group of very high human development and with a score 0.316 ranked fifty-second out of compared 189 countries. The world Economic Forum’s Gender Gap Report gave Romania a score of 0.711 ranking it sixty-third out of 149 countries.

On SDG target 4.3 (By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university), between 2007 and 2016 the total participation rate in formal and non-formal education and training (SDG 4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex) changed very little from 7.4 per cent to 7.0 per cent. During the same period the participation rate for female changed from 7.9. to 8.5 per cent, and male from 6.9 to 6.4 per cent. Participation rate was very similar for both sexes.

During the 16-year period from 2000 to 2017 the ratio of gender parity index for participation rate in organized learning was basically 1.0 - i.e. exact parity (1.02 in 2000 and 0.99 in 2017) (SDG target 4.5 (By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations), SDG indicator 4.5.1. Gender parity index for participation rate in organized learning (one year before the official primary entry age), (ratio)). In 2007, the ratio of gender parity index for participation rate in formal and non-formal education and training (SDG indicator 4.5.1 on gender parity index for participation rate in formal and non-formal education and training (ratio)) is 1.13 and 1.15 in 2017, which means that female population actually has more formal and non-formal education than male group.

5 Political institutions

Romania is a parliamentary republic, and its constitution provides for a separation of the executive, legislative and judicial branches. Its Constitution was approved in a national referendum in 1991 and was amended in 2003.

The President is the Head of State and is elected by universal suffrage for a five-year term, eligible to serve no more than two consecutive terms. The President directs and implements domestic and foreign policy.

The executive branch consists of the President and the Prime Minister, who is appointed by the President with the consent of the Parliament. The Cabinet, or the Council of Ministers, is headed and appointed by the Prime Minister. As December 2019, the Government consists of 16 Ministries (www.gov.ro/en).

Romania has a bicameral 465-member Parliament which is composed by the Romanian Senate (136 members) and the Chamber of Deputies (329 members). Deputies for both chambers are elected by popular vote in a mixed member proportional system election and they serve four-year terms. The citizens have two votes, one for each chamber. The candidates with at least a 50 per cent share of votes win directly a seat in the legislative. Votes for the unelected candidates are counted together nationally and the remaining seats are distributed among political parties in proportion of their share of the vote.

The threshold to win parliamentary representation is 5 per cent for political parties and 8 to 10 per cent for political alliances. The parties that did not manage to surpass the national threshold of 5 per cent can still obtain parliamentary representation by winning at least six districts in the elections of the Chamber of Deputies or three districts the election to Senate.

Romanian local government is divided to three administrative levels: counties, towns and communes. There are 41 counties and one municipality, the capital Bucharest. Various ministries have their own subordinate administrative entities at county, town and commune levels in the form of inspectorates and public directorates.

The Judiciary is made up of a hierarchical system of courts, organized as follows: the Supreme Court of Justice, courts of appeal, tribunals, specialized tribunals, military courts, regional courts and the Arbitrary Court. The
Supreme Court of Justice comprises 11 judges appointed for three-year terms by the President in consultation with the Council of Magistrates.

The Constitutional Court is a separate institution which rules on whether the laws, decrees or other bills enacted by the authorities are in conformity with the Constitution. It is comprised of nine members serving nine-year term, of which the President, the Senate and the Chamber of Deputies each appoint three members.

Map 1: Administrative map of Romania

Source: Prepared by ECE based on the map provided by the Ministry of Environment, Waters and Forests, 2019.
Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.
PART I: ENVIRONMENTAL GOVERNANCE AND FINANCING
Chapter 1

LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK

1.1 Legal framework

Law making

In Romania, the Parliament adopts so-called organic laws, which regulate areas of high importance (such as state borders, citizenship, organization and functioning of courts) by qualified majority and ordinary laws by simple majority. The Government has a limited law-making mandate given by Romanian Constitution. Apart from Government decisions (GDs) which are considered implementing acts and can be issued at any time, the Government can issue regular ordinances only during parliamentary recesses, while Government emergency ordinances (GEOs) are to be issued only in emergency situations. However, the number and substance of the issued emergency ordinances is clearly pointing to their overuse (e.g., the Government issued 77 emergency ordinances during 2019)\(^1\). This practice is against principles granted by the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention), which Romania ratified in 2000 and the Law No. 52/2003 on transparency of decision-making in the public administration with subsequent amendments grants to its citizens participation in decision making in environmental matters.

Organic laws cannot be amended by ordinary ones, but ordinary laws can be amended by GEOs which are passed without public consultations. The Romanian Constitution prescribes that an emergency ordinance shall only come into force after it has been submitted for debate in an emergency procedure to the Chamber having the competence to be notified, and that the ordinances that the Parliament has been notified about shall be approved or rejected in a law: “The notified Chamber shall be convened by all means within five days after submission of an emergency ordinance. If, within 30 days at the latest of the submitting date, the notified Chamber does not pronounce on the ordinance, the latter shall be deemed adopted and shall be sent to the other Chamber, which shall also make a decision in an emergency procedure.” However, legislative practice often differs from the prescribed procedure. Sometimes emergency ordinances are subsequently adopted by an additional law, but several years can pass between adoption of the emergency ordinance and the law which approves it. In many cases, the ordinance is just deemed adopted without discussion in the Parliament.

“Emergency” procedures for environment management lack public participatory process and necessary discussions among interested stakeholders. Relying on these procedures affects the quality of the environmental legislation which invokes more frequent changes, and legal certainty. Moreover, emergency ordinances do not have an “expiry date” since they in fact do not resolve emergency situations of limited duration, but rather fundamental legal issues. The GEO No. 195/2005 on environmental protection with its numerous subsequent amendments being an example. The general practice is to amend legal acts many times keeping their original number, which makes difficulties for proper legal analysis when it comes to identification of the latest amendment and finding final consolidated version. Additionally, certain issues are not only covered by several laws but also by a number of emergency ordinances and other legal acts. This negatively affects clarity, consistency and coherence of legislation, as well as the stability of the legislative framework.

Environmental information including environmental legislation should be available to public free of charge, in accordance to Romanian legislation. The website of the Ministry of Environment, Waters and Forests contains a large volume of information, but listed environmental legislation is outdated due to frequent changes in the legislation framework and irregular updates of the site.

Both central and local government administrations can issue various legislative acts, such as Ministerial Orders (MO), instructions and regulations. On the top of the national legislation, the legal framework, especially on environment, is predominantly shaped by the EU legislation and international treaties.

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\(^1\) Parliament of Romania, Chamber of Deputies/Legal database [www.cdep.ro/pls/legis/legis_pck.frame](http://www.cdep.ro/pls/legis/legis_pck.frame)
Part I: Environmental governance and financing

Use of the Regulatory Impact Assessment

Since 2005, Regulatory Impact Assessment (RIA)-related procedures were introduced in Romania. The mode of its use is regulated by GD No. 1361/2006 regarding the content of the instrument for presenting the draft normative acts submitted to the Government’s approval which was amended several times by 2015. At least in theory, legislative proposals cannot enter the legislative process without RIA approval. In practice, the use and the quality of RIA are highly uneven, and many RIAs are superficial. In line with GD No. 1361/2006, RIA should assess the impact on the environment as: impact on the use of natural resources, impact on protected species, natural habitats, protected areas and landscapes and impact on the quality of the environment, detailed on each of the environmental factors. RIA is usually used in the late stage of legal drafting, as a mean to justify the need of additional regulation, which in many cases leads to over-regulation instead of result-oriented legal framework. Romania’s 2018 National Reform Programme stresses the Government’s commitment to improve RIA, but as at December 2019, no improvements have taken place. The Strategy for Better Regulation 2014–2020 (GD No. 1076/2014) also foresees implementation of the extended RIA process.

Environmental laws

Harmonization with the EU legislation

In the environmental sector as at December 2019 Romania is among EU Member States with the highest number of infringements of the EU legislation. Since joining EU in 2007, there were a total of 154 cases of infringement of EU environmental law. During the first five years of EU membership Romania succeeded to close 89 cases, which left the country in January 2012 with only one unresolved case. That case, related to air quality in Bucharest is still active, and the European Commission (EC) referred Romania over it to the Court of Justice of the European Union, in May 2018. Since 2012 up to December 2019, Romania had additional 64 infringement cases, out of which 53 have been closed, while in December 2019, 11 were still active. Active infringements are related to air quality, waste management, water management, NATURA 2000 network and non-conform transposition of EU legislation on the protection of animals used for scientific purposes into Romanian legislation.

In the period 2007–2019, most of the cases (111) were so-called non-communication cases, e.g., failure to notify EU on transposition of legislation. It points out to the lack of proper mechanism within the public administration to perform this task before the formal notice of the EC, which in few cases led to referring Romania to the Court of Justice of the European Union and caused financial fines. It also points out that in many cases Romania did not transposed EU legislation timely. The number of non-communication cases significantly decreased lately and in 2018–2019 three cases were active. The rest of the cases were mainly related to waste management, nature, water and air protection and application of general environmental protection mechanisms such as environmental impact assessment. Out of 11 active infringement cases, 3 are already referred to the Court of Justice of the European Union: (1) the unresolved case on air quality in Bucharest; (2) failing to close 68 waste disposal sites, which are not licenced as landfills; and (3) failing to prescribe specific measures for environment protection from mining waste in Bosneag pond extension.

In the beginning of 2020, the EC decided to start two additional procedures against Romania for breach of environmental legislation. On February 12 the Commission decided to send a letter of formal notice to Romania, giving it one month to take the necessary measures to properly implement the EU Timber Regulation (EU) No. 995/2010, which prevents timber companies from producing and placing on the EU market products made from illegally harvested logs. In another infringement procedure which started in February 2020, the EC sent formal notice to Romania to adopt its first national air pollution control programme, as required under Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants.

Environment protection

The main environmental principles, competences of institutions and general rules related to the main environmental governance mechanisms such as licencing and environmental impact assessment are regulated by

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the GEO No. 195/2005 on environmental protection, which has been amended 23 times, including the last two amendments issued in 2019.

The Law No. 292/2018 on the assessment of the impact of certain public and private projects on the environment was adopted in December 2018 although the deadline for transposition of the Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment was in May 2017. The Law repeals the Order of the Minister of the Environment and Forests, the Minister of Administration and Interior, the Minister of Agriculture and Rural Development and the Minister of Regional Development and Tourism No. 135/76/84/1.284/2010 regarding the approval of the methodology for applying the environmental impact assessment for public and private projects issued in 2010, the Order of the Minister of the Environment No. 1.026/2009 regarding the approval of the conditions for the elaboration of the environmental report, the report on the impact on the environment, the environmental balance sheet, the location report, the safety report and the appropriate evaluation study issued in 2009. The Law, apart from transposing the Directive 2014/52/EU is expected to improve public participation in the procedure on environmental impact assessment (EIA) (chapter 2).

Air Quality

Air quality is regulated by the Law No. 104/2011 on ambient air quality. The Law was amended twice, by GD No. 336/2015 and GD No. 806/2016. Both decisions transposed Directive (EU) 2015/1480 laying down the rules concerning reference methods, data validation and location of sampling points for the assessment of ambient air quality. The legal framework on air quality was improved by GD No. 257/2015 regarding the approval of the methodology for the elaboration of the air quality plans, short-term action plans, plans for maintaining the air quality, MO No. 36/2016 of the Ministry of Environment, Waters and Forests on approval of air quality zones and agglomerations, and GD No. 283/2017 on amending of GD No. 1.856/2005 on national emission ceilings for certain atmospheric pollutants. It was followed by the Law No. 293/2018 on reduction of national emissions of certain atmospheric pollutants. In 2018 two additional orders of the Ministry of Environment MO No. 598/2018 and MO No. 657/2018 were adopted to regulate management regimes in air quality zones and agglomerations.

Four active infringement cases of the EU law are related to air quality. In the first case which dates back to 2009, EU referred Romania to the Court of Justice of the European Union in October 2018, after two formal notices and three reasoned opinions. The main arguments of the EC are that since 2007, the daily limit values for concentrations of PM$_{10}$ have been systematically and constantly exceeded in Bucharest and that despite those exceedances, Romania has not established plans for that zone which comply with relevant EU legislation. The second case started in 2013, and thus far Romania received three formal notices regarding non-compliance of several large combustion plants with emission limit values of SO$_2$, NO$_x$ and dust. The non-compliance led to the exceedance of the national emission ceilings set under the Romania's transitional national plan and an additional infringement procedure due to failure to control SO$_2$ emissions from two large combustion plants, Govora 2 and Deva 2 which have pushed Romania's emissions over the established national ceilings for those pollutants. No action was taken by Romania on that matter. The fourth active infringement case has been started in 2017 and Romania has received thus far two formal notices regarding gaps in monitoring of air pollution.

Water

Water protection is regulated by the Water Law No. 107/1996 and its 25 subsequent amendments (nine times amended with emergency ordinances), of which 13 were adopted after 2012. There are two active infringement cases related to water protection in Romania. The EC initiated an infringement procedure against Romania over the micro hydropower plant projects on the Dejani-Lupşa and Vistişoara rivers on the northern slope of the Făgăraş Mountains in 2015. An additional letter of formal notice to Romania was sent in 2018 due to failure to comply with EU rules on urban wastewater treatment in large urban areas. Following Romania's accession to the EU, large agglomerations should have ensured adequate collection of urban wastewater by 31 December 2013 and its treatment by 31 December 2015. The final deadline for Romania to comply with the Directive 91/271/EEC on urban waste-water treatment (Urban Wastewater Treatment Directive) was 31 December 2018 according to its Accession Treaty. In July 2018, 189 large agglomerations were still not in conformity with the urban wastewater collection obligations under EU law, while 198 large agglomerations did not comply with treatment obligations.
The 2016 World Bank's Water Diagnostic Report for Romania states that the focus on compliance with the EU water legislation created a positive momentum for water reforms in Romania - carrying out extensive assessment and mapping of the status of all water bodies across the country, and identifying measures to be carried out in an integrated manner to move towards sustainable management, including for mitigating flood risks and starting to implement massive infrastructure investment for pollution abatement. In spite of the many challenges, encountered and delays in implementation, states the Report, there have been benefits for public health and the protection of water resources in Romania.

**Nature Protection**

GEO No. 57/2007 on the regime of the protected natural areas, the conservation of natural habitats of the flora and fauna regulates nature protection. It was amended 22 times, 18 times since 2012. The Law No. 95/2016 on the establishment of the National Agency for Natural Protected Areas and for the amendment of the GEO No. 57/2007 establishes the National Agency for Natural Protected Areas (NANPA) and GEO No. 75/2018 for the amendment and supplementation of legislative acts on environmental protection and on foreigners’ status centralizes the management of protected areas and gives NANPA competences which were previously intrusted to different public institutions, non-governmental organizations (NGOs) and other custodians. Out of total 606 Natura 2000 sites registered in Romania by 2018, 234 sites were originally managed by those entities which were not part of state administration in charge of nature protection. The fact that decision on centralizing this function was made in the form of an emergency ordinance means that public and a number of interested stakeholders were not given the opportunity to participate in decision making.

Twenty-seven senators contested the decision in front of the Constitutional Court of Romania. The Court decided (by Decision No. 214/2019) that the Government did not demonstrate urgency for all the matters regulated by GEO No. 75/2018 and declared it unconstitutional in June 2019. Following that decision, the Law No 220/2019 amending some normative acts on environmental protection, containing the most provisions of GEO No. 75/2018, was adopted through a regular parliamentary procedure. Apart from regulating procedure for changing the boundaries of protected areas, the Law allows NANPA to keep cooperation contracts with previously appointed custodians, and especially with those who are the beneficiaries of the projects funded by EU under the Large Infrastructure Operational Programme 2014–2020, in order to establish the rights and obligations of the parties related to implementation of those projects.

In its Environmental Implementation Review 2019 report, the EC notes that the implementation of nature protection legislation is still a challenge in Romania and in July 2019 Romania received a formal notice due to incomplete Natura 2000 network. As at December 2019, Romania has not designated any sites of Community Importance as Special Areas of Conservation and has therefore exceeded the six-year deadline under the Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive). Less than 50 per cent of protected natural areas have adopted management plans.

**Waste management**


Out of 11 active infringement cases in December 2019, 4 are related to waste legislation. The EC referred two of these cases to the Court of Justice of the European Union. Although Romania’s transition period granted through the Accession Treaty for the implementation of the Directive 1999/31/EC on the landfill of waste (Landfill Directive) ended in 2017, the case on landfills started in 2012 with warnings by the EC regarding landfills which operated in breach of EU waste and landfill legislation, representing a serious risk for human health and the environment. In October 2018, the Court of Justice of the European Union declared that, by having failed to close as soon as possible 68 disposal sites Romania is in breach of its obligations and should pay the fine. The case on mining waste referred to the Court of Justice of the European Union had the same conclusion. Romania was fined due to significant pollution from dust coming from the Bosneag pond extension which, particularly at times when the wind is stronger, has a harmful effect on the health of the local inhabitants and the environment.
In 2019 the EC opened two additional waste related infringement procedures against Romania. These two procedures are related to missing reports on implementation of several waste acts on waste electrical and electronic equipment, batteries and accumulators, end-of-life vehicles, and shipments of waste, and late transposition or failing to report on designation of competent authorities and national provisions related to ships recycling. Although the latest infringements do not require costly investments and could be overcome easier, they reveal systemic weak points of public administration. According to the 2018 Early Warning Report of the EC, Romania is considered at risk of non-compliance with the 2020 municipal waste recycling target of 50 per cent, which might trigger additional disputes.

**Chemicals**

In the period from 2007 to 2016 Romania had some 50 cases of late transposition on chemicals management.

**Animal welfare**

As at December 2019, there is only one infringement procedure in this area, related to non-conform transposition into Romanian legislation of the Directive 2010/63/EU on the protection of animals used for scientific purposes. Formal notice to Romania was sent in July 2018. This issue is regulated by the Law No. 43/2014 on the protection of animals used for scientific purposes which was amended immediately after the EU notice by the Law No. 199/2018 and again by the Law No. 149/2019.

**Environmental noise**

Environmental noise is mainly regulated by GD No. 321/2005 on evaluation and management of environmental noise. Among active infringement procedures there is one on late transposition of the Directive (EU) 2015/996 establishing common noise assessment methods. Romania faces challenges related to implementation of environmental noise legislation regarding noise mapping and ensures their availability through INSPIRE Geoportal, which provides spatial distribution of environmental data.

**Environmentally related provisions in sectoral legislation**

**Energy**

The main legal act in the energy sector is the Law No. 123/2012 on electricity and natural gas. Since 2012 the Law has been amended more than 20 times. The Law integrates principles of environment protection and gives the competence to the ministry in charge of energy to supervise the implementation of energy-related environment protection measures, while operators and the Energy Regulatory Agency should ensure compliance with environmental regulations in general. The Law No. 121/2014 on energy efficiency sets a national indicative target of 19 per cent for reducing energy consumption by 2020 in Romania. According to the 2018 report on progress made by EU Member States towards the national energy efficiency targets for 2020, in 2017 Romania managed to keep its primary energy consumption level below indicative 2020 target.

The Energy Efficiency Directive (EU) 2018/2002, which sets energy efficiency targets by 2030, should be transposed by 25 June 2020. In 2015, Romania was the first country in Europe that achieved EU target regarding the share of renewables in the generation mix, far ahead of the 2020 deadline. Romania plans to increase its target for 2030 to 30.5 per cent through the renewed National Integrated Climate Change and Energy Plan. The Law No. 196/2016 on the minimum income for quantitative inclusion regulates the protection of vulnerable consumers, including at reducing the energy poverty. According to the law, households are entitled to receive a subsidy when their net adjusted income, calculated on the basis of a specific methodology is less than 600 lei per month, this being an indicator, but not the only one, for energy poverty. The law entered into force in 2018.

**Industry and mining**

Environment protection from industrial activities in Romania is generally regulated by the Law No. 278/2013 on industrial emissions as amended by GEO No. 101/2017. Industrial activities that are not subject to integrated environmental permits are regulated by environmental permits introduced by the Order of the Minister of
Environment and Sustainable Development No. 1798/2007 on the approval of the procedure for environmental licence issuing. The Mining Law No. 85/2003 as subsequently amended, regulates licensing in this area, requiring from the licence holders an appropriate financial guarantee for environmental rehabilitation, as set out in the Environmental Rehabilitation Plan, which shall be developed by every licence holder, as prescribed by the law.

Despite these provisions, Romania has 548 mining sites (quarries, mines, ponds) where mineral resources have been exhausted or their extraction has become technically or economically non-feasible, so their closure and rehabilitation of mining sites was approved by governmental decisions. The Government also established the Mines Conservation and Closure Company “Conversmin” (GD No. 313/2002) to carry out mine closure and remediation. While some coal mines (Petrika, Paroseni, Lupeni) are being closed in accordance with the Council Decision 2010/787/EU allowing state support for this purpose, the Mining Law is still in conflict with State Aid Rules of EU, which prevents further state action in this area.

Spatial planning

The amendment introduced in 2011 (GEO No. 7/2011) to the Law No. 350/2001 on spatial planning and urbanism recognizes the need to protect landscapes and natural heritage, based on the GDs made upon opinions of the ministry in charge for environment and local authorities. The amendment of 2013 (Law No. 190/2013 regarding the approval of the GEO No. 7/2011) prescribes that the competent public authority when issuing a building permit has to take into account the existence of a risk of breach of environmental protection norms. However, the amendment deletes the provision which was originally prohibiting the building of objects which violate nature protection.

Agriculture

The legal framework on agriculture is comprehensive, consisting of more than 20 laws and by-laws regulating among others the management of agricultural land, agricultural funds, fishery, aquaculture, apiculture, vine production, production and use of wild mushrooms, medicinal and aromatic plants. The most recent package (Laws No. 133/2019 and No. 166/2019) stipulates the measures to regulate the market of agricultural products and establishment of the Agency for the quality and marketing of agri-food products. There is also a new Law No. 32/2019 on animal husbandry, which was rejected by Romanian Senate back in 2014.

Provisions related to the protection of environment are mostly related to the Code of Good Agricultural Practice which was firstly adopted in 2000 by the GD No. 904/2000, approving the Action plan for water protection against pollution caused by nitrates from agricultural sources, and was further improved in 2015. It is also worth mentioning that the beekeeping activity in Romania, as regulated by the Apiculture Law No. 383/2013 emphasizes traditional character of beekeeping practice and protection of bees. Further on, the GEO No. 34/2000 on organic food products and establishment of measures on green agri-food products with its subsequent amendments regulates organic agriculture.

Forestry

The Forest Code (Law No. 46/2008) was substantially amended in 2015 by the Law No. 133/2015 in order to reduce illegal logging. The main changes are related to forest management. About half of Romania’s forests are in state hands, managed by National Forests Administration “Romsilva”. The other half, held privately, is managed by forest districts (private or state) or by private owners. Forest management plans became mandatory for forest properties over 10 ha. The Code also sets a 30 per cent maximum market share per tree species, which was contested on the grounds of EU competition law. In 2019 civil society in Romania called for even stricter forest legislation and better protection of forests inside protected areas. The Code also introduced provisions related to climate change and ecosystem services.

Despite the new legislation (Forest Code amendment 2015), the new institutional structure (National Forestry Guard) and an updated policy draft, Romania still faces problems with forests management. Illegal logging led to large public protests in several Romanian cities in November 2019. After the protests the Ministry of Environment confirmed that 20 million m³ of wood are illegally logged annually. At a scientific debate organized in Bucharest on 5 December 2019, both the Scientific Council of the National Institute for Research and Development in Forestry named after Marin Drăcea and the Academy of Agricultural and Forestry Sciences
named after Cheorghe Ionescu Șișești, disagreed with the ministry by presenting their points of view on the methodology of logging accounts. In February 2020 EC sent formal notice to Romania regarding the breach of Regulation (EU) No 995/2010 laying down the obligations of operators who place timber and timber products on the market. As stated in the Commission’s press release, in the case of Romania, the national authorities have been unable to effectively check the operators and apply appropriate sanctions for placing on the market products made from illegally harvested logs. Inconsistencies in the national legislation do not allow Romanian authorities to check large amounts of illegally harvested timber. In addition, the Commission has found that Romanian authorities manage the forests (including authorising logging) without evaluating beforehand the impacts on protected habitats as required under the Habitats Directive and Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive). Furthermore, there are shortcomings in the access of the public to environmental information in the forest management plans. The Commission also found that protected forest habitats have been lost within protected Natura 2000 sites in breach of the Habitats Directive and Directive 2009/147/EC on the conservation of wild birds (Birds Directive).

Transport

Legislative activities in the transport sector were the most intensive during 2015 with adoption of 14 different laws that regulate registration of vehicles, railway, financial measures, International Maritime Organization construction codes, civil aviation, and respect of human rights in transport sector, taxi and rental transport, establishment of the State inspectorate for control of road transport. In accordance with the Directive 2009/28/EC on renewable energy, at least 10 per cent of energy in transport sector should come from renewable sources in order to reduce transport impact on air pollution and climate change. In that direction GD No. 935/2011 on promotion of use of biofuels and bioliquids and the Law No. 34/2017 on installation of the infrastructure for alternative fuels promote e-mobility in Romania.

Housing

The Law No. 114/1996 on housing has been amended more than 20 times. The last amendment made in 2017 (Law No. 143/2017) adds the chapter on solidarity housing. This solidarity housing is meant for persons of families evicted from homes on legal grounds due to unsettled mortgage arrangements. Solidarity houses belong to the local public authorities and are rented to people in need who are paying part of the rent up to 10 per cent of their income, while the rest is subsidized from the local budget of the administrative-territorial unit where the housing is located. Rental contracts are concluded for the period of five years and can be renewed. If the local authorities own more dwellings than needed for persons or families evicted from their homes due to unsettled mortgage arrangements, it can be rented with subsidy to other categories of people who cannot afford housing.

According to Eurostat, 14 per cent of Romanian citizens encounter environmental problems because of noise around their dwelling, while 19 per cent complained on pollution. However, those issues are not addressed by Romanian legal framework on housing. The Law No. 114/1996 states that dwelling as a minimum condition should have access to electricity and drinking water, controlled disposal of wastewater and household waste.

Tourism

The Law No. 275/2018 on organization and conduct of tourism activity in Romania requires the central authority in charge of tourism to cooperate with public authorities on environment matters and make joint decisions on conditions of use of the natural tourist resources, as well as to cooperate with local public administration and the National Mineral Resource Agency regarding conservation and exploitation of natural resources with therapeutic properties. Tourist operators have obligation to ensure the protection of the environment in accordance with environmental legislation. The Law requires preservation of bathing water quality and notification to water management, environmental protection and public health authorities in case of presence of polluting substances in the sea water.

Health

Since its adoption the Law No. 95/2006 on the reform in the health sector was amended 66 times, in majority of cases ad-hoc, through emergency ordinances. Various legislative acts both from environmental and health sector highlight mandatory cooperation of health and environment authorities.

1.2 Policy framework

**Governmental policy documents**

The Government programme serves as a basis for further development of the sectoral policy documents made by ministries according to their competences. The Government Programme covering the period 2017–2020 was replaced twice by decisions of the Romanian Parliament on granting confidence to the new governments, adopting the Government Programme 2018–2020 in January 2018 by Decision No. 01/2018 and consequently in November 2019, by Decision No. 22/2019. Having in mind that the latest Government was dismissed by no-confidence vote 5 February 2020, the current Government Programme is expected to be replaced with a new programme.

The Partnership Agreement for Romania 2014–2020, signed by Romania and EC, with a broad scope, configures a development strategy with direct impact on policy and its implementation. In the Agreement, Romania committed to achieve certain goals and targets, several on environment, namely under one of the five strategic priorities defined: Encouraging sustainable and efficient use of natural resources through promotion of energy efficiency and a low carbon economy, protection of the environment and adaptation to climate change. The Agreement reflects one obligation derived from the Accession Treaty: pursuing the development of water and wastewater services, completing the compliance of agglomerations above 10,000 inhabitants and substantially contributing to the equipment of agglomerations above 2,000 inhabitants.

At the same time, Romania has a wide-ranging framework of thematic strategies and programmes on environmental issues and of environment-related sectoral strategies.

All the strategies, plans and programmes developed consider the responsibilities of Romania as an EU Member State and incorporate the EU policy, legal and regulatory frameworks. The Accession Treaty provided some transition periods for the implementation of environmental obligations that have already ended (until 31 December 2015 for the industrial plants falling under the incidence of the Council Directive 96/61/EC concerning integrated pollution prevention and control; until 31 December 2016 for the municipal waste deposits; until 31 December 2018 for the requirements on the residual urban water collection and treatment systems).

**Government Programme**

The 2019 Government Programme sets some priority actions in the sector of environment protection, related to forest management, water protection, waste, nature protection and air quality. The Programme is very much oriented towards compliance with EU environmental law.

In the forest management, it focuses on improvement of the legislative framework regarding the harvesting of timber from the forest fund and granting of firewood to the population and elaboration of a national plan to combat illegal logging. The recent formal notice of the EC on infringement of the Timber Regulation (EU) No. 995/2010 shows that additional efforts are needed in this direction.

In water protection, the Government was planning to intensify dialogue with the EC regarding compliance related to treatment of municipal wastewater in order to find solutions to avoid infringement. Considering that the infringement procedure on this matter is ongoing since June 2018 and cannot be avoided, the dialog was probably intended towards paying the infringement fee. Similar actions are proposed in waste management and air protection.

Romania is expected not to meet the target of 50 per cent of recycling of municipal waste by 2020, since the rate, as stated in the 2019 Government Programme is only 14 per cent (7 per cent recycling of materials and 7 per cent composting), the Programme proposes elaboration of a project of technical and operational assistance financed from European funds to support the local authorities in order to increase the institutional capacity for the
implementation of the separate collection of waste and establishing of minimum service standards for separate collection of waste

Regarding the nature protection the Government planned to revise GEO No. 75/2018 on regulation of the right of custody on the protected natural areas by improving the process of designating and managing protected sites and strengthening communication with stakeholders but also strengthening the administrative capacity of NANPA.

On air protection, the Government recognized the necessity of compliance with the objectives of air quality in cities and updating and improving the air quality monitoring network and ensuring prompt reporting of air quality data. Recent infringement of 12th February 2020 regarding Romania’s failure to timely develop an air pollution control programme shows that further efforts are needed in this sector.

Institutional Strategic Plan

The Institutional Strategic Plan (ISP) for the period 2018–2021 of the then Ministry of the Environment was revised by the General Secretariat of the Government as a part of the project on improving the efficiency of public spending funded by World Bank, thus developing ISP for the period 2019–2022. The document states that no major changes occurred in the structure of ISP, compared with the 2018–2021 ISP and that reporting the implementation of ISP is not institutionalized, as no formal system for collecting, reporting and aggregating data is in place. The ISP has eight strategic objectives:

1. Protection and conservation of biodiversity, and promotion of the services provided by ecosystems and sustainable use of biodiversity components;
2. Efficient management of waste, contaminated sites, hazardous substances and promotion of circular economy in compliance with the sustainable development principle to protect human health and the environment;
3. Development of the national meteorological system;
4. Improvement of the assessment and the management of air quality, air emissions, environmental noise and the environmental radioactivity;
5. Prevention and control of industrial pollution and effective management of industrial accidents risk;
6. Horizontal legislation and the creation of infrastructure for spatial information;
7. Reduction of greenhouse gas emissions (GHG) coming from economic activities in accordance with the EU targets and the adaptation to climate change impact, both current and future;
8. Strengthening of the institutional capacity.

National Reform Programme

The National Reform Programme (2017–2020) is the framework platform for defining the development priorities guiding Romania’s development until 2020, in order to achieve Europe 2020 Strategy objectives and for defining structural reforms to meet the challenges identified by the EC for Romania. Although the title of the document points to reforms, its substance is more a report on on-going and planned projects aimed at achievement of specific objectives within defined priorities. Its priorities defined under the section “Environment and climate change” are:

- Building a low-carbon economy
- Reducing GHG emissions from the energy and transport sectors
- Mitigating climate change effects
- Supporting sustainable development and improving the quality of environment
- Improving the management of waste, including hazardous waste
- Protecting nature and conserving biodiversity

The implementation of the National Climate Change and Low Carbon Growth Strategy (GD No. 739/2016) and the National Strategy for the Sustainable Development of Romania 2030 (SDS 2030) (GD No. 877/2018) would support achieving the first four priorities, however, they are not prioritised in the Government Programme and ISP.
Strategic documents on sustainable development and green economy

National sustainable development strategies

The first National Sustainable Development Strategy - Horizons 2013–2020–2030 was adopted in 2008. Nine years later, in 2017 the Government decided to develop a new strategy – National Strategy for the Sustainable Development of Romania 2030. At this point, line ministries were asked to write reports on implementation of the previous strategy, but those were only internally used in preparation of the new document and never published.

An initial analysis of the current policy and legal framework was necessary during preparation of SDS 2030 in order to develop guidelines for its alignment with the 2030 Agenda. A comprehensive public consultation process was organized during preparation of the draft strategy involving more than 1,000 people. In November 2018, the Government adopted the National Strategy for the Sustainable Development of Romania 2030 by GD No. 877/2018. As of December 2019, the Action Plan for implementation of the new strategy was still in drafting process, hence no implementation reports exist on SDS 2030 either. Financial resources for implementation of SDS 2030 are not identified and ensured yet.

As at December 2019, based on the global reporting, e.g., the SDGs Index and Dashboards 2019, Romania was well positioned as forty-second out of 162 countries. The Recommendation 1.1 (a), made in the second EPR of Romania, is partially implemented with the adoption of the SDS 2030. The current lack of a financial solution to ensure the SDS 2030 implementation hampers the full implementation of this recommendation. The Recommendation 1.1 (b) concerning the setup of the National Sustainable Development Council is planned to be implemented through the establishment of the Consultative Council on Sustainable Development, with a broad participation of representatives of the scientific and academic community, business community, social partners and civil society.

In 2018 Romania issued the Voluntary National Review of the implementation of Sustainable Development Goals (SDGs), focusing on SDGs 6, 7, 11, 12, 15 and 17.

Green economy

Several strategic documents promote green economy principles in Romania. The National Strategy for Green Jobs 2018–2025 and the action plan for its the implementation (GD 594/2018) have three main objectives:

- Stimulating entrepreneurship and creating green jobs, with a focus on the high competitiveness sectors identified in the 2015–2020 National Competitiveness Strategy and in the 2014–2020 National Research, Development and Innovation Strategy;
- Developing skills for the workforce in order to ensure quality employment in competitive sectors that can generate green jobs;
- Strengthening cooperation with relevant actors and the dialogue with social partners in sectors with high potential for creating green jobs.

Among Batumi Initiative for Green Economy (BIG-E) commitments, Romania opted for development of the National sustainable consumption and production strategy, as well as the establishment of a thematic group of experts on green economy within the Inter-ministerial Committee for the coordination of the integration of environmental protection into sectoral policies and strategies at the national level. At the twenty-fourth Session of the ECE Committee on Environmental Policy held in January 2019, Romania informed that its efforts regarding BIG-E commitments are on-going. Under the development of the National Sustainable Consumption and Production Strategy it was reported that Interministerial Committee through a working group on the development of the SDGs at national level worked on mapping the existing policies and actions at national level and involvement of stakeholders in promotion activities on sustainable consumption and production. Thematic group of experts on green economy within the Inter-ministerial Committee for the coordination of the integration of environmental protection into sectoral policies and strategies at the national level was not established yet, but Romania reported on adoption of the Law on Green Public Procurement (GPP) No. 69/2016, and elaboration of a guide which includes minimum environmental protection criteria for product and service groups as well as standard specifications, which will serve for development of the National Green Public Procurement Action Plan, as the next step.
Economic and social development

In Romania, there are many initiatives related to economic and social development integrated into various strategic documents, such as the Strategy on Social Inclusion and Poverty Reduction 2015–2020, National Strategy “A Society without Barriers for People with Disabilities”, National Strategy for the Protection of the Elderly and the Promotion of Active Ageing, Strategy on the Inclusion of the Romanian Citizens belonging to Roma Minority, National Rural Development Programme 2014–2020. However, the impact of these strategic documents is hardly measurable due to general lack of reporting on implementation and impact of adopted policies.

Strategic documents on environment

Air quality

Although the Government Programme 2017–2020 foresees the development of the national strategy on air quality, such document has not been developed. In addition, the Directive (EU) 2016/2284 requires EU Member States to develop air pollution control programmes by 2020, but Romania had not started drafting these programmes as at December 2019.

Air-related policy documents are local air quality plans which are under the responsibility of mayors. The Romanian law requires air quality plans for improvement of air quality in zones where there are exceedances of concentrations of pollutants and maintenance air quality plans in zones where air quality is compliant with set limit values. Out of 41 air quality zones and 13 agglomerations, air quality plans with measures for improvement of air quality are approved for 7 municipalities (Bucharest, Baceu, Braşov, Braila, Galati, Iasi, and Magurele) and maintenance plans for 14 counties. No reports on implementation of these plans or analysis of effects of implemented measures are available.

In accordance with the Protocol Concerning the Conditions and Arrangements for Admission of the Republic of Bulgaria and Romania to the European Union, Romania was granted transition periods to implement the Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants (LCP). The deadline for gradual compliance of 34 LCP installations with the emission limit values of sulphur dioxide, 64 LCP installations with the emission limit values of nitrogen oxides and 22 LCP installations with the emission limit values of dust expired on 31 December 2013. Romania had an additional transition period for six LCP installations to meet emission limit values of nitrogen oxides in the period between 1 January 2016 and 31 December 2017. In the meantime, the Directive 2001/80/EC was repealed by the Directive 2010/75/EU on industrial emissions (Industrial Emissions Directive (IED)), which made stricter requirements regarding emission limit values for LCPs. In 2017, Romania adopted the revised National Transition Plan for LCPs (MO No. 1430/1063/2017 of the Ministry of Environment) postponing achievement of emission limit values for 32 LCP installations by 30 June 2020.

Waste management

The National Strategy for Waste Management for the period 2014–2020 was approved by the GD No. 870/2013. The National Waste Management Plan (GD No. 942/2017) was adopted with a delay in December 2017. Projections of the quantities of waste are given for the period 2015–2025, and the plan covers the period 2018–2025. The Plan also contains a waste prevention programme until 2025. The waste management plans at county level are under preparation. In 2017, Romania’s recycling rate (including composting) reported to Eurostat was 14 per cent, while its landfilling rate was 70 per cent, one of the highest in Europe. The EC considers Romania at risk of missing the 2020 target of 50 per cent preparation for re-use/recycling of municipal waste. In the Early Warning Report for Romania on the implementation of EU waste legislation the Commission highlights that:

- Separate collection service, including for bio-waste, is not being sufficiently implemented;
- Not enough economic incentives to move away from disposal;

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- Extended producer responsibility schemes for packaging are not efficient and do not fully cover the costs of separate collection;
- The necessary infrastructure is still lacking;
- More investment is needed in projects higher up the waste hierarchy (e.g., recycling) that go beyond treatment of residual waste; and
- Public engagement in separate collection is very low.

The National Strategy and National Action Plan for Management of Contaminated Sites (GD No. 683/2015) in Romania were developed in 2014 with the aim to outline the principles of management of contaminated sites by 2015, defined as short term, to solve the problem of contaminated sites requiring urgent action by 2020, defined as midterm, and to complete the action by 2050. No reports are available on mentioned policy acts but considering active infringements of EU law and data on waste management, results remain limited. During 2016–2017 the Ministry of Economy drafted a mining strategy including a list of 548 sites contaminated by mining waste, but it is still not adopted, missing another strategic impact assessment (SEA) report after the revision.

Water

Romania made a second cycle of river basin management plan (RBMP) in December 2015. The whole territory is assigned to a single River Basin District (Danube). According to the 2019 EC Report on the implementation of the Directive 2000/60/EC establishing a framework for Community action in the field of water policy (Water Framework Directive) in Romania, nearly 75 per cent of the planned measures established in the first cycle have been implemented. As explained in the document, there have been some delays in the implementation of the first Programme of Measures due to a lack of finance, a lack of mechanism and delays in the tendering of contracts. In line with the Water Law No. 107/1996, the RBMP and Flood Risk Management Plans have not been integrated into a single plan.

Nature protection

The National Strategy and Action Plan for Biodiversity Conservation 2013–2020 has already expired in January 2020. No implementation reports were made available and there is no information on plans to revise the strategy or draft a new one.

Climate change

Romania adopted the National Climate Change Strategy for the period 2013–2020 in 2012. In the meantime, in 2016 the Government adopted the National Climate Change and Low Carbon Growth Strategy (GD No. 739/2016) complemented with a National Action Plan 2016–2020, which is an update and extension of the National Climate Change Strategy 2013–2020. The EC Environmental Implementation Review 2019 states that reports on the implementation of the new strategy have not been published. Romania drafted the national energy-climate plan for the period 2021–2030 but it is not adopted yet.

Sectoral development with a possible impact on the environment

Energy

A draft energy strategy was intended to cover the period 2016–2030, but during the SEA procedure it was updated several times, hence the last version has a timespan 2019–2030 with perspectives for 2050. According to the National Reform Strategy 2019, the main reasons that led to update of the draft are the correlation with the Government Programme, the updating of the economic data and the correlation with the evolution of the “Clean Energy Package”.

The draft strategy has five key strategic objectives to be achieved in the time horizon 2030 to 2050: increasing the level of energy security, competitive energy markets as the basis of a competitive economy, clean energy with low greenhouse gas emissions and other pollutants, modernization of the energy management system and protecting the vulnerable consumers and reducing energy poverty to ensure human rights. Objectives of the draft strategy are in line with the 2030 Agenda, related with several SDGs.
However, despite the recent update of the draft strategy, under the obligation stemming from the EU climate and energy package, Romania drafted a new strategic document for energy sector, the Integrated National Plan on Energy and Climate Change 2021–2030. The deadline for submitting the final plan to the EU was 31 December 2019, and Romania fulfilled this obligation with a delay having submitted the Plan in May 2020.

**Mining and quarrying**

The draft mining strategy for the period 2017–2035 is not adopted. After three SEA reports produced during the course of 2017, the strategy was revised accordingly and needs another SEA analysis, which requires time and funds. The final SEA report was expected in June 2018, but at the end of 2019 the development of this report was not commenced.

**Industry**

After a period of deindustrialization, Romania started with a strategic planning in the industrial sector as of 2013. The National Strategy for competitiveness 2015–2020 (GD No. 775/2015) identified challenges and set several objectives such as industrial revitalization through smart specialization and transformation of knowledge into a source of competitive upgrading, re-defining industrial policies through the orientation towards innovation and strengthening the functioning of the market mechanism and integration of network industries in the industrial value chain. The National Strategy for Research, Development and Innovation 2014–2020 (GD No. 929/2014) focuses on smart specialization in several areas of strategic interest: biochemistry, information and communication technology, space and security, energy, environment, climate change, eco-nanotechnologies and advanced materials.

**Agriculture, fishery and apiculture**

Although agricultural sector strategic directions are strongly influenced by the EU Common Agricultural Policy (CAP), there are a number of policy documents at national level prioritising certain activities to be funded through CAP instruments or other sources. In the period 2014–2020, a total public contribution of more than €9.5 billion (€8.1 billion from the EU budget, €112.3 million transferred from the direct payments allocation for 2015–2017 and €1.34 billion of national co-funding) has been allocated for measures that will benefit rural areas. Support to organic agriculture is granted through co-financing programmes, with funding from the EC, professional organizations and the state budget.

The Rural Development Programme 2014–2020 focused on the following priorities: improving competitiveness in the agri-food sector, preserving ecosystems and ensuring an efficient use of natural resources and boosting the economic and social revitalisation of rural areas. The Programme promotes diffusion of knowledge among farmers through appropriate advisory services, adapting the research activities and the results of research to the needs of farmers and food producers, availability of capital and technology for modern agricultural activities, involvement of young generation in agribusiness, restructuring and modernizing the small farms into market-oriented farms, setting-up producer groups and organizations and integrated food chains.

There is also the Multiannual Agricultural Plan, as well as an operational programme for fisheries and maritime business for the same period (2014–2020).

The National Apiculture Programme for the period 2020–2022 and the Sectoral Research and Development Plan for Agriculture and Rural Development 2019–2020 are expected to be financed with €100 million from the state budget for projects for applied research and innovation in agricultural sector.

**Forestry**

In October 2017 the Government opened public consultations on the draft forestry strategy for the period 2018–2027. More than two years after, the strategy is not adopted yet. Apparently, there were no interested licensed companies to perform SEA.
Transport

The 2008 Strategy for sustainable transport for the period 2007–2013 and 2020, 2030 aims for sustainable development of the transport sector, economy and environment, at increasing the accessibility of Romania, ensuring inter-modality of the transport system, promoting the balanced development of all modes of transport and improving the quality and efficiency of services. Effects of this strategy were not reported and not elaborated during the preparation of a new master plan.

In 2011 the Ministry of Transport approved the Intermodal transport strategy for 2020 (MO No. 457/2011 of the Ministry of Transport and Infrastructure). As at December 2019, there is a draft general master plan of transport. The planning horizon is the year 2040, and 2030 for the results of the Transport Model. The plan states that given the level of uncertainty associated with long-term forecasting, any action beyond the year 2030 should be reconfirmed based on an updated plan (e.g., carried out within 10-year time, i.e., in 2025). However, the draft plan was prepared in 2016 and not adopted yet, although it was prepared in accordance with ex ante conditionality for the European structural and investment funds.

Tourism

The main tourism policy document is the National Tourism Development Master Plan for Romania 2007–2026. This is further elaborated in the National Eco-Tourism Strategy 2019–2029 (GD No. 358/2019) and the National Strategy for Spa Tourism (GD No. 571/2019).

The National Eco-Tourism Strategy contains detailed description of eco-tourism activities offered in Romanian national parks. Following the Strategy, Romania has elaborated a system for designation of eco-destinations based on the European Ecotourism Labelling Standard, which is recognised by the Global Sustainable Tourism Council. Two destinations were designated initially (Zarnesti-Piatra Craiului and Mara-Cosau-Cocosului). Another three destinations, the “Bison Land” in the Neamt County, Hateg Land and Dornelor Land are already certified as ecotourism destinations by the Ministry of Tourism under the name “Gate of the Carpathians”.

Health

The National Health Strategy “Health for Prosperity” (GD No. 1028/2014) covers the period 2014–2020 and has a strong community component, aiming to integrate the social and healthcare aspects for the rural population. It is based on the principle of providing equal access to essential services, cost-effectiveness and optimization of health services with emphasis on prevention. This approach stems from the fact that Romanian health system used to rely on the hospital care as the main method of intervention, causing one of the highest recorded rates of hospitalization in EU6.

Policy coherence for sustainable development

Immediately after adoption of the 2030 Agenda for Sustainable Development (2030 Agenda), Romania established the Sub-Committee for Sustainable Development within the lower house of the Parliament of Romania in November 2015. In April 2016 both houses of the Parliament issued a joint statement by Declaration No. 1/2016 supporting the implementation of the 2030 Agenda, highlighting the need for sustainable development to be at the core of public policy and expressing in that way strong political will of Romania, at the highest political level, to align with 2030 Agenda. The Declaration highlights that the Parliament is a main actor in promoting the SDGs due to its legislative and budgetary powers and proposes establishing a Department for Sustainable Development within the Prime Minister’s Office in order to ensure high level intersectoral coordination for development of an adequate long-term policy framework. The Declaration also highlights the need of coherent and unitary approach to the SDGs throughout parliamentary activities to facilitate the continuity of commitment of all political forces, independently from future parliamentary majorities.

During the Romanian Presidency of the Council of the EU, Romania made an important initiative to enhance sustainable development partnerships among EU member states and third parties. The Conference organized in

6 Analysis of National Health Strategy 2014–2020, Luminița Gabriela Popescu, National University of Political and Administrative Studies, Bucharest, Romania
Bucharest in April 2019 on the topic “Agenda 2030: Partnerships for Sustainable Development” involved participants from EU, the Western Balkans, the Eastern Partnership and Central Asia, and resulted with the Bucharest Declaration that emphasizes the need for urgent action on implementing the 2030 Agenda through operationalizing sustainable development strategies and action plans, importance of having coherent strategies in ensuring that SDGs are being taken into consideration when implementing relevant public policy as well as the importance of focusing on the interlinkages between the three pillars of sustainable development. The Declaration also calls for more robust partnerships and effective multi-level and multi-stakeholder governance for Sustainable Development, including national, EU, regional and local authorities and civil society.

The Department for Sustainable Development within the Prime Minister’s Office was established by GD No. 313/2017 in May 2017, and the SDS 2030 was adopted in November 2018. Further on, in 2019 the Government established the Interdepartmental Committee for Sustainable Development (GD No. 872/2019), consisting of members of the Government, chaired by the Prime Minister. Until the establishment of the Department for Sustainable Development within the Prime Minister’s Office, inter-ministerial cooperation on sustainable development was coordinated by the Inter-ministerial Committee for the coordination of the integration of environmental protection into sectoral policies and strategies at national level, which was established within the ministry responsible for environment protection. The new structure is expected to ensure better inter-ministerial cooperation since Romania recognized that coordination of public policy in order to align it with 2030 Agenda goes beyond the traditional institutional framework. However, the main actors of inter-ministerial cooperation should be sustainable development hubs to be established within each ministry. As stipulated in the SDS 2030, these hubs shall deal with SDGs and targets specific to their portfolio. This division of tasks might be practical, but strictly sticking to targets falling into public policy domain of a certain ministry or institution can hinder wider cooperation which is necessary to adequately address numerous cross-cutting issues, evaluate every target from various angles and create comprehensive response with contributions from multiple sectors.

According to the SDS 2030, decision making on sustainable development would be assisted by a Consultative Council for Sustainable Development which is not established yet. The Strategy also proposes to establish a Coalition for Sustainable Development involving large groups (as young people, NGOs, private sector, local authorities, unions, employer’s associations, research, development and innovation institutions, academic community, mass media, religious organizations, farmers, senior citizens and families), based on sustained, permanent dialogue. With all the mentioned established bodies and described structure planned through SDS 2030, Romania covered involvement of all key stakeholders in future decision making on sustainable development.

Participatory process is an effective tool in implementing SDGs. Romania pursued extensive involvement of stakeholders through the process of development of the SDS 2030. The process took a year during which the Department for Sustainable Development organized several national debates with NGOs, private sector, trade unions, research institutes and academia, meetings with the Parliament’s Sub-Committee for Sustainable Development, ministries and SDS 2030 drafting committee, involving more than 1,000 participants. In addition, eight regional seminars were held in each development region in the process of localizing the 2030 Agenda. The SDS 2030 was developed with the idea that it should be understood by all, and its length and simplicity reflect that. However, it lacks essential information on mechanisms to achieve SDGs and targets, as well as a vision on dynamics of their achievement, which is also necessary to enhance understanding of the Strategy. The Action Plan for implementation of the SDS 2030 is not developed yet. All three pillars of sustainable development are in the SDS 2030 connected through focusing on citizens and community. It highlights that economy performance of the country is often measured in figures that do not reflect the needs and potential of each citizen and recognizes the need to bust social capital, ensure sustainable development at the community level and cultivate the sense of belonging to the community in order to foster the entrepreneurial and civic spirit and sense of responsibility for environment protection. The most indicative examples of cross-sectoral linkages in the SDS 2030 appear in relation to environment SDGs and targets: climate change, ecosystems and ecosystem services and green economy. As at December 2019, the principles of SDS 2030 are not reflected throughout the policy framework. Inter-sectorial linkages are weak and substantial social and environmental approach in developing of sectorial strategies is rare or purely declarative. Robust administrative apparatus of Romania functions on principles of clear delineation of responsibilities which in many cases leaves “common grounds” without enough attention from both sides.
In line with usual practice in the Romanian policy framework practices, the SDS 2030 does not contain mechanism for regular reporting on implementation, except that “periodical reporting to EU” has been foreseen, although without any details on the frequency of reporting. The Department for Sustainable Development is in charge for reporting on implementation of SDS 2030. As at December 2019, the National Institute of Statistics is working on updating of the existing Sustainable Development Indicators system. The system was developed based on the previous National Strategy for Sustainable Development. The database of Sustainable Development Indicators of Romania includes 103 indicators with data series available in the national statistical system since 2000. The Sustainable Development Indicators system is harmonized and congruent with the indicators used in the EU and integrates, economic, social and environmental indicators, used to assess the three-dimensional evaluation of sustainable development in Romania. According to the SDS 2030, the update of the system is expected to be completed by the end of 2020.

Since SDS 2030 does not contain specific targets and measures it was not possible to estimate the funds for its implementation. Moreover, no assessment on available funds used to achieve SDGs and combine them with emerging challenges and ensure the implementation of the SDS 2030 in its initial phase, including finding financial mechanisms for funding in the long-term, is carried on.

Strategic environmental assessment, including public participation

Since 2012 and as at December 2019, 12 SEA procedures were completed for plans and programmes at the national level (Table 1.1) and 18 for regional plans and programmes. In addition, there were 13 cases (12 national and 1 regional plans) where the competent authority (Ministry of Environment) decided that the SEA procedure is not necessary during the screening phase. Also, some procedures were started but not completed yet (e.g., Forestry Strategy, Mining Strategy, Energy Strategy).

Table 1.1: Completed SEA procedures for plans and programmes at national level, 2013–2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Strategic documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>National Strategy for Waste Management</td>
</tr>
<tr>
<td>2013</td>
<td>National Plan for Development of Hydrographic Basins</td>
</tr>
<tr>
<td>2015</td>
<td>National Programme for Rural Development 2014–2020</td>
</tr>
<tr>
<td>2015</td>
<td>National Plan for Transition for combustion plans under the provisions of the Directive 2010/75/EU on industrial emissions</td>
</tr>
<tr>
<td>2015</td>
<td>Operational Programme for Big Infrastructure 2014–2020</td>
</tr>
<tr>
<td>2015</td>
<td>Regional Operational Programme 2014–2020</td>
</tr>
<tr>
<td>2015</td>
<td>General Master Plan for Transport 2014–2030 (not yet adopted)</td>
</tr>
<tr>
<td>2015</td>
<td>Operational Programme for Fishery and Maritime Business 2014–2020</td>
</tr>
<tr>
<td>2015</td>
<td>National Strategy regarding Climate change and economic growth based on low carbon emissions</td>
</tr>
<tr>
<td>2016</td>
<td>Strategy for territorial development</td>
</tr>
<tr>
<td>2017</td>
<td>National Plan for Waste Management</td>
</tr>
</tbody>
</table>

Note: No SEA procedures were completed during 2012.

The number of SEA procedures have been drastically reduced compared to the period 2007–2011 when there were in average 250 SEA procedures per year, although the MO No. 995/2006 of the Minister of Environment and Water Management for approving the list of plans and programmes subject to SEA procedure was repealed only in 2016 by the MO No. 777/2016 of the Ministry of Environment, Waters and Forests.

The central public authority for environmental protection implements SEA procedures for plans and programmes at the national level and regional level and LEPAs at local or county level. In any case, the authority responsible for plan or programme undergoing SEA procedure has certain obligations during the process, especially when it comes to public participation. These obligations include publishing the notice on the availability of the draft plan or programme in newspapers and on its web page, informing the public on finalizing of the environmental report and on the place and public consultations schedule and addresses where interested stakeholders can submit written comments. Comments are sent to the authority in charge of plan or programme and the competent authority for environment protection (Ministry or respective LEPPA). The authority in charge of the plan or programme is responsible to inform the public about all decisions made in the SEA process, as well as on environmental considerations integrated in the plan or programme, the opinions expressed by the public and by other authorities and, as appropriate, how the results of transboundary consultations have been considered in the decision-making
process. Having in mind that both preparation of plans and programmes and SEA documentation is often outsourced to consultants, the quality of the reports on public participation could vary from case to case. Some authorities are publishing very detailed reports answering every single comment and question, while others just mention which comments were addressed, without any further explanation. Hence, public comments are sometimes treated with due respect, while in certain cases the programme/plan proponent is just making sure to fulfil formally all the legal requirements regarding public participation. In Romania, the public has the opportunity to comment on the screening decision within 10 calendar days of publication of the announcement. The competent authority for environmental protection may reconsider the decision at the screening stage, based on justified proposals of the public. Despite this opportunity, in practice, public participation mainly takes place in the final stages of the SEA procedure, as the early stages of the SEA do not generate any interest and in many cases, no public opinions are submitted during the public debates.

The Recommendation 2.1.a from the second EPR of Romania asked the Ministry of Environment and Forests to review the regulatory acts that define activities subject to Strategic Environment Assessment in order to decrease the number of cases subject to it and streamline assessment procedures. By repealing the act which listed plans and programmes subject to SEA, Romania implemented the recommendation. The second part of this recommendation (Recommendation 2.1.b) was partly implemented by the GD No. 1000/2012 regarding the reorganization and functioning of the National Agency for Environmental Protection and of the public institutions that are subordinated to it (chapter 2). Otherwise, no major changes were made in the legislation on SEA. The adoption of some draft policy documents is blocked by the SEA procedure, because an authorised entity has to perform SEA, and, in some cases, lack of interest or of availability of funds to complete SEA procedure.

1.3 Institutional framework for sustainable development and environment

Institutional framework for sustainable development

In the period 2012–2017, the sustainable development policy was coordinated by the Ministry of Environment and the Inter-ministerial committee for coordinating the integration of the field of environmental protection in sectoral policies and strategies at national level, which had a prominent role in implementation of the National Sustainable Development Strategy - Horizons 2013–2020–2030. The Inter-ministerial Committee was comprised of state secretaries from all the ministries and governmental institutions and chaired by the Minister of Environment. In 2015, the Sub-Committee for Sustainable Development was established within the lower house of the Romanian Parliament.

The Department for Sustainable Development within the Prime Minister's Office is entrusted to coordinate the implementation activities stemming from SDGs of the 2030 Agenda. The maximum number of positions in the Department is six positions, excluding the State Councillor heading the Department and his cabinet. According to SDS 2030, the Department for Sustainable Development shall ensure policy coherence on sustainable development and will be consulted in the case of draft laws with direct impact on achievement of the goals defined in the Strategy. An efficient implementation of these tasks might bring an extra burden to the Department, considering the broadness and all-pervading nature of sustainable development, as well as frequent changes of Romanian legal and policy framework.

The Interdepartmental Committee for Sustainable Development consists of members of the Government, chaired by the Prime Minister. The Committee is expected to draw up annual reports for the Parliament and approve action plans. The Department for Sustainable Development is the permanent secretariat of the Committee.

There is a plan to establish a consultative council for sustainable development, an advisory body providing also scientific and technical support, initiating and drawing up policy documents and methodologies for implementation of the 2030 Agenda. The consultative council will be composed of 34 members of the scientific and academic community, business community, social partners and civil society. In addition, sustainable development hubs shall be established at the level of central public authorities. The idea is that existing staff in these institutions continue working on SDGs and targets specific to their institution portfolio, at the same time acting as liaisons between their institutions and the Department for Sustainable Development, and the National Institute of Statistics.
The Romanian Agency for International Cooperation for Development was established in 2016 with responsibility to implement development and humanitarian programmes and projects. There is also a legislative framework adopted in 2016 aimed to streamlining development assistance to recipient countries of official development assistance (ODA) and strengthen cooperation with strategic partners. As presented in the Voluntary National Review 2018, Romania seeks to increasingly involve a range of actors working on development cooperation, such as government institutions, NGOs, media, academia and the private sector to coordinate action at national level in accordance with the Multiannual Strategic Program on International Cooperation for Development and Humanitarian Assistance 2018–2021.

**Institutional framework for environment**

**Ministry of Environment, Waters and Forests**

In November 2016 a new Government was elected. In the new composition of the Government the Ministry of Environment has been merged with the Ministry of Waters and Forests. Since 2012 there were several changes in the composition of the ministry in charge of environmental affairs: in the period 2009–2014 the situation was the same as current, there was a single Ministry of Environment, Waters and Forests (figure 1.1). In 2014 two ministries split. In 2016 the Ministry of Environment was renamed into Ministry of Environment and Climate Change and in 2017 it was again for very short period Ministry of Environment and Forests. From April 2017 to November 2019 two ministries were established – Ministry of Environment and Ministry of Waters and Forests. All these transformations were coupled with frequent personnel changes. Since 2012, following the changes in the Romanian Government, the ministry in charge of environment protection changed its title, scope of work and internal organization several times (table 1.2).

<table>
<thead>
<tr>
<th>Period</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2009–February 2012</td>
<td>Environment and Forests</td>
</tr>
<tr>
<td>February 2012–April 2012</td>
<td>Environment</td>
</tr>
<tr>
<td>May 2012–December 2012</td>
<td>Environment and Forests</td>
</tr>
<tr>
<td>December 2012–December 2014</td>
<td>Environment and Climate Change</td>
</tr>
<tr>
<td>January 2017–June 2017</td>
<td>Environment and Climate Change</td>
</tr>
<tr>
<td>June 2017–November 2019</td>
<td>Environment</td>
</tr>
<tr>
<td>November 2019–February 2020</td>
<td>Environment, Waters and Forests</td>
</tr>
</tbody>
</table>

The maximum number of employees in the Ministry of Environment, Waters and Forests is 484, excluding the posts in the Cabinet of the Minister. According to the last available legislation in force (GD No. 43/2020 on the organization and functioning of the Ministry of Environment, Waters and Forests), the National Environmental Protection Agency (NEPA), National Environmental Guard (NEG), the Administration of the Danube Delta Biosphere Reserve and Forest Guards are subordinated to the ministry in charge of environment. These institutions have legal personality and are fully financed from the state budget. While NANPA is subordinated to the ministry in charge of environment, it has the legal personality but is financed from its own revenues and receives subsidies from the state budget. The National Meteorological Administration and Romsilva operate under the authority responsible for environment. Finally, units that work in the coordination of the Ministry of Environment, Waters and Forests are the Environment Fund Administration and National Administration of Romanian Waters.

Apart from subordinated institutions, committees, councils and other bodies operating under the Ministry of Environment, Waters and Forests are:

- Inter-ministerial committee for coordinating the integration of the field of environmental protection in sectoral policies and strategies at national level;
- Inter-ministerial Water Council;
- Inter-ministerial Commission for the implementation of the Action Plan for the protection of waters against nitrate pollution;
- Ministerial Committee for Emergency Situations;
- National Commission on Climate Change;
Chapter 1: Legal, policy and institutional framework

- National Commission for the Safety of Dams and Other Hydrotechnical Works;
- National Commission for the safety of flood protection dams;
- National Hunting Council;
- National Committee for the International Hydrological Programme;
- Centre for ecological reconstruction of rivers
- Petrom environmental committee;
- Technical-economic commission;
- Technical Commission for Forestry;
- EU Ecolabel Commission;
- EMAS Committee.

The Ministry of Environment, Waters and Forests has a long list of competences, but its main tasks are related to strategic planning and development of regulatory framework.

NEPA was established in 2004 and in 2005 the regional environmental protection agencies (REPAs) and local environment protection agencies (LEPAs) became subordinated to it. In 2012 REPAs were abolished and ceased to exist. LEPAs are based in counties, so there are 42 branches throughout the country, in 41 counties and in Bucharest, which has special status within Ilfov County. In line with GD No. 43/2020 the maximum number of employees in NEPA and LEPAs is 1,925, some 1,700 of these positions are filled. NEPA has about 200 employees while the maximum number set by legislation is 275. In line with its operation and functioning regulation, NEPA's main duties are:

- Technical support in drafting of normative acts, sectoral strategies and action plans on environment protection;
- Issuing regulatory acts, according to the legal provisions;
- Support to the implementation of policies, strategies and legislation on environment protection.

But in fact, the main duties of NEPA and LEPAs are related to issuing integrated environmental permitting (IPPC permits) and permits on waste and nature protection. They are also in charge of monitoring of air quality and environmental noise. The National reference laboratory for air quality is an integral part of NEPA and it is the only accredited laboratory in the country for air quality assessment. Laboratories in LEPAs are not accredited.

**National Environmental Guard**

NEG was established in 2003 with the mandate of performing environmental inspection. NEG is organised similarly to NEPA, with 41 county branches, plus the commissariat in Bucharest and one in Danube Delta Region. In line with GD No. 43/2020 the maximum number of employees in NEG is 809, but as at December 2019, only 559 were employed. In the commissariat in Bucharest, which also serves as NEG headquarters, there are 14 inspectors. According to NEG, out of 90,000 permitted installations, some 20 per cent are supervised on annual basis which represent a significant administrative burden of some 80–100 inspections/per inspector/per year. NEG has an open telephone line 24 hours/day.

Regulated activities and installations are classified based on their environmental performance and risk that they pose to for categories: A – inspected twice a year, B – inspected once a year, C – inspected once in two years and D – inspected once in three years. Annual inspection plans are submitted to the ministry in charge of environment for approval. NEG also performs ad hoc inspections upon request or notification from operator in case of malfunction (operators are legally obliged to inform NEG on any issue that might cause environmental incompliance). Moreover, NEG organizes thematic inspections which are simultaneously organized throughout the country. While in 2019 waste management was in their thematic focus, priority for 2020 are installations which are subject to integrated permitting. NEG closely cooperates with Police, Border Police, Customs, Public Health Institute, Romanian waters, Forestry Guard and various other actors such as laboratories.
Figure 1.1: Structure of the Ministry of Environment, Waters and Forests


Note: As at January 2020. * organized according to the legislation in force by order of the minister; ** organized at the compartment level. Maximum number of positions: 484 (exclusively dignitaries and posts related to the Ministry’s Cabinet).
Part I: Environmental governance and financing

National Agency for Natural Protected Areas

The establishment of NANPA in 2016 represents one of the major changes in environmental institutional set-up in Romania in the period since 2012. The role of this agency is to manage protected areas and especially NATURA 2000 sites. The Agency should ensure unitary and efficient administration of the protected natural areas. Despite many efforts invested in decentralisation of the governance, this decision goes towards recentralization of administrative power since territorial structures of the Agency do not have legal personality and are organized at the level of management or service.

Since 2018 in accordance with the GEO No. 75/2018, the Agency took over all rights and obligations arising from the contracts, conventions, agreements and protocols regarding the management of protected natural areas concluded by the central public authority for environmental protection, waters and forests with different counterparts. It also took over the responsibilities over natural protected areas which were not.

Danube Delta Biosphere Reserve Administration

The Danube Delta Biosphere Reserve has its own administration and is managed independently from the National Agency for Protected Natural. GD No. 43/2020 prescribes the maximum of employees in Danube Delta Biosphere Reserve Administration (DDBRA) to 171. According to the Law No. 82/1993, Danube Delta Biosphere Reserve is managed by a scientific council that includes representatives from the Administration and from all the other organizations involved in the reserve, such as local authorities, ministries, health services, research institutions, Romanian Academy of Science, economic companies.

The Administration is led by a Governor, appointed by the Government at the proposal of the ministry in charge of environment. The Scientific Council of the Reserve is guiding and supervising the activity of DDBRA. The Governor participates in meetings of the Scientific and the Advisory Councils. In the short period between June 2017 and January 2018 DDBRA was subordinated to the General Secretariat of the Government (GEOs No. 50/2017 and 1/2018).

The Administration is very active in cross-border cooperation. There are cooperation agreements and a joint management plan with the Republic of Moldova and Ukraine and an active participation in the implementation of the EU Danube Strategy. Through different regional projects policy documents were developed for Danube Delta such as Danube Delta Integrated Sustainable Development Strategy (World Bank), Climate change adaptation strategy and action plan for Danube Delta region (WWF) and Flood Action Programme (the International Commission for the Protection of the Danube River (ICPDR).

Environment Fund Administration

The Environment Fund Administration functions as a specialized body of the central public administration and provides financial support for the realization of projects and programmes for environmental protection. It was established by GEO No. 196/2005 on the Environmental Fund. The Administration works under the supervision of the Steering Committee composed of the President and the Vice-president of the Environment Fund Administration and Chiefs of Divisions. The Steering Committee proposes projects to be funded by Environment Fund to the Approval Committee, which makes decision by voting. The Approval Committee is composed of representatives of state administration from the sectors of environment protection, finance, economy, energy, transport, health, agriculture, regional development and public administration, NEPA, NEG, local administration, employer’s confederation, environmental NGOs and the President of the Administration.

The Administration has total 230 employees, 100 of them in the department in charge of collection and control of environmental taxes and 130 in the project unit. There are no branch offices, but some 60 representatives work all over the country on tax collection control.

The Fund is financed by various environmental taxes payed by polluters, including revenues from EU emission trading system, EU funds and state budget. Programmes funded by the Fund include: Programme to stimulate the renewal of the national car park (RABLA7 Programme (chapter 8)), Programme on installation of heating systems

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7 RABLA means wreck in Romanian
using renewable energy, including the replacement or completion of the classic heating systems (Programme Casa Verde (chapter 8)); Afforestation Programme; Programme of support for production of energy from renewable sources; Programme aimed at the protection of water resources, integrated water supply systems, treatment plants, sewage and wastewater treatment plants, various educational and public awareness projects. Detailed financial reports are available on the website of the Fund (www.afm.ro/index.php). In 2018, the Fund financed various projects with total 449.521 million lei.

**National Administration “Romanian Waters”**

The National Administration “Romanian Waters” was established by GEO No. 107/2002. Its branches are organized by hydrographic basins, and therefore it has in its subordination 11 Water Basin Administrations, as follows: Someș-Tisa, Crișuri, Mureș, Banat, Jiu, Olt, Argeș-Vedea, Buzău-Ialomița, Dobrogea-Litoral, Prut and Siret. The National Institute of Hydrology and Water Management is also a part of the structure of the National Administration.

**National Forests Administration “Romsilva”**

Romsilva is an autonomous company of national interest under the authority of state through the central public authority in charge of forests entrusted with the sustainable and unitary management of state-owned forest fund, including protection, preservation and development of forests and the management of hunting and fishing activities therein. Romsilva manages 3.136 million hectares of state-owned forest fund (as at 31 December 2018), which represents 48 per cent of all forests in the country. Romsilva also manages 22 national and natural parks in many of which the state-owned forest fund has a significant share, ensuring the conservation of biodiversity in these protected areas. In addition, Romsilva is in charge of thoroughbred horses (16 horse sections), the Posada hunting museum and the Silva Complex.

**National Forest Guard**

In October 2015, the Government established National Forestry Guard to fight illegal logging (box 1.1) by GD No. 743/2015. The Guard is a territorial public institution, with legal personality, subordinated to the central public authority responsible for the national forest area, financed entirely from the state budget. There are nine territorial units of the Guard in charge of implementation and control of the forestry and hunting regime within the national forestry fund.

**Box 1.1: “Screaming trees” – Use of solar-powered smartphones against illegal deforestation in Romania**

Romanian NGO "Agent Green" was founded in 2009. In 2017 the NGO started the project “Screaming trees” in Covasna County to prevent illegal logging. The technical innovation of the project is based on smartphone mounted on the top of the trees where they get sunlight, so they get charged during the whole year through the solar panels. The package also includes signal boosters, amplifiers and antennas to capture as much of the signal as possible.

The system is giving trees a voice. By measuring volume, motor rotations and sound durations, the device detects chainsaws and then sends a notification, screening for help. There is a live feed from installed Tweeting Trees devices at [http://screamingtrees.co/](http://screamingtrees.co/). It enables following the measured data of volume, motor beats per minute (BPM) and sound-duration. If volume and BPM reach the level of a running chainsaw, with a sound duration of at least 60 seconds, there is a parameter match and device immediately send out a warning signal to Agent Green volunteers.

**Local authorities**

Environmental protection at local level is mainly managed by local branches of the central administration (NEPA, NEG, NANPA) which are distributed in counties or in regional offices (Romanian Waters, National Forest Guard).

Responsibilities on environmental management of local authorities (municipal councils) are limited to waste management, drinking water supply and communal wastewater, in the context of provision of local public services. Drinking water supply and communal wastewater treatment are provided through water and sewerage companies. In addition, the responsibility for the collection and management of municipal solid waste belongs to
the municipalities. On air quality county and municipal councils are responsible for drafting, adopting and implementing air quality plans.

**Inter-ministerial cooperation**

Inter-ministerial cooperation mechanisms are established in numerous legal acts providing details on functions of different inter-ministerial bodies such as committees, commissions, and steering bodies. The legislation also prescribes many cases when different ministries have to be consulted or make joint decisions with the competent ministry. Usually it brings cooperation up to high management level. Over-regulation in this context prevents ad-hoc cooperation needed in everyday job of public servants, who often have to obtain an authorisation to communicate various issues with colleagues from other institutions.

The Inter-ministerial Committee for the coordination of the integration of environmental protection into sectoral policies and strategies at national level still holds the relevant competences in environment protection. In the second EPR of Romania, it was recommended that the Committee should improve the coordination and harmonization of relevant strategies and programmes, taking into account results of forward looking analysis and improve monitoring and evaluation of progress made in the implementation of the adopted policy documents in order to provide regular feedback for revision of the ongoing actions and preparation of the new ones (Recommendation 1.2). General state of the Romanian policy framework related to environment protection shows that the recommendation is not yet implement and remains valid, taking into account lack of reporting on policy implementation and incoherent policy planning. not only between sectors and subsectors, but also internally, e.g. new policy documents on the same topic are often developed long before the expiry of the previous, rarely referring to effects of the precedent policy and lessons learned.

The Recommendation 1.3 made in the second EPR of Romania asked the Government to ensure the strengthening of cooperation between public authorities with environment-related functions and impacts is partially implemented as inter-ministerial cooperation mechanisms are established in numerous legal acts providing details on functions of different inter-ministerial bodies such as committees, commissions, and steering bodies. However, over-regulation in this context prevents ad-hoc cooperation as public officers often have to obtain an authorisation to communicate various issues with colleagues from other institutions.

### 1.4 Assessment, conclusions and recommendations

**Assessment**

The environmental legal framework is prone to the frequent changes not only because it has to be harmonized with ever growing EU environmental legislation, but also because of an overuse of emergency procedures to introduce legal interventions addressing specific matters, but which often results in further changes. Environment-related emergency procedures account for large portion of law-making in Romania. They lack public participation in decision making and do not respect citizens’ right to participate in decision making in environmental matters as stipulated the Aarhus Convention and the Law No. 52/2003. Substance regulated by these legal acts does not reflect urgency and their validity is not limited to overcoming an urgent issue. This negatively affects legal certainty, coherence of legislation and stability of the legislative framework. Both environment protection and nature protection are regulated by emergency ordinances which dates to 2005 and 2007, respectively (GEO No. 195/2005 on environmental protection and GEO No. 57/2007 on the regime of the protected natural areas, the conservation of natural habitats of the flora and fauna), and which have been amended more than 20 times by December 2019. The law-making practice related to keeping the original legal act uncodified for decades despite of its numerous amendments reduces the clarity and consistency of legal framework. The country recognized the need for simplifying legislation through the Strategy for Better Regulation 2014–2020 (GD No. 1076/2014), but as at December 2019 tangible results are not evident.

The use of the Regulatory Impact Assessment instrument can address many shortcomings of the Romanian legal framework, ensuring that implementation of regulatory acts could be financed, that they are not overlapping or contradictory with other existing legislation and that public consultation process contributed to the quality of legislation. The environmental, social and economic impacts, including impacts on small and medium enterprises and competitiveness remain equally important. The environmental dimension of RIA could contribute towards moving in the direction of achievement of SDGs.
The Romanian policy framework experiences systemic instability. The main policy document, the Government Programme, does not provide directions to Institutional Strategic Plans covering overall strategic directions of the sectorial policies. Due to political reasons (change of governments), the Government Programme for the period 2017–2020 changed twice while another change is expected during 2020 for the same reason. In the meantime, ISPs for the period 2018–2021 passed through mid-term revision in order to align them with the budgeting cycle 2019–2022 and became ISPs for the period 2019 - 2022. Hence, those documents are highly inconsistent in terms of timespan and priorities defined. Moreover, the National Reform Programme (2017–2020) gives different priorities. Despite the exercise of the World Bank made with ISPs 2019–2022, strategic planning is generally not connected with budgetary cycles.

This systemic instability is also reflected in the practice to develop strategies with ambitious horizons. On one hand, instead of reviewing the strategies in line with the new circumstances, they are replaced with a completely new document, long before the expiry of the precedent document, defining different goals and priorities and again, an extended time span. On the other hand, there are draft strategic documents trapped in a long and costly SEA procedures coupled with administrative adoption procedures, which makes the adopted document already outdated at the time of adoption. As at December 2019, strategic documents in energy, mining, forestry and transport sector are stacked in the process of adoption, taking into account that these draft documents were prepared during the period 2016–2017. Policy documents rarely contain measurable indicators and precise targets. Their implementation is not monitored and reported and in general, no analysis of their effects is carried out. All of this makes the policy framework weak and hardly useful. It also reflects to difficulties to attract donor funds including available EU funds.

By adopting the Declaration No. 1/2016, the Parliament of Romania expressed political commitment of the country on supporting the 2030 Agenda at the highest level, calling for the continuity of that commitment beyond the electoral cycle actual at that moment. Romania also initiated signing of the Bucharest Declaration by representatives of EU member states, Western Balkan countries Eastern Partnership and Central Asia, at the occasion of the Conference organized in Bucharest in April 2019 promoting partnerships for sustainable development. The Department for Sustainable Development within the Prime Minister’s Office is responsible for inter-ministerial and cross-sectoral cooperation on sustainable development. It has the mandate to ensure policy coherence on sustainable development although this task is insufficiently elaborated and lacking mechanisms to deal with unwanted conflicts and trade-offs between sectorial policies.

Progress has been achieved with the implementation of the SDG target 17.14 through the adoption of the SDS 2030 and the creation of the Department for Sustainable Development within the Prime Minister’s Office. This department is responsible for inter-ministerial and cross-sectoral cooperation on sustainable development and has the mandate to ensure policy coherence on sustainable development although this task is insufficiently elaborated and lacks mechanisms to deal with unwanted conflicts and trade-offs between sectorial policies. Besides, the SDS 2030 was not developed on the foundations of the existing policy documents, and an ex post systematic analysis of the existing policy framework was not carried out to assess their alignment with the 2030 Agenda, integrating SDGs and targets into policy documents and ensuring their interlinkage and coherence. There is a plan to establish a consultative council for sustainable development, an advisory body providing also scientific and technical support, initiating and drawing up policy documents and methodologies for implementation of the 2030 Agenda.

Participatory process was applied during the development of SDS 2030 but is not guaranteed in all stages of implementation, monitoring and reporting on achievement of SDGs. Achievement of the policy coherence on case-by-case basis, at the time of adoption of the new policy documents might be slow due to time consuming process resulting in an uneven level of harmonization across sectors. Regular reporting mechanisms on implementation of SDS 2030, including data collection and coordination across the sub-national levels are not established. Moreover, funds for implementation of SDS 2030 are not ensured yet.

By adopting the SDS 2030, the Recommendation 1.1 made in the second EPR of Romania is partially implemented (a) or ongoing (b), however, the missing part is related to a lasting solution for financing implementation of the SDS 2030. The second EPR of Romania has also recommended an improvement of the coordination and harmonization of relevant strategies and programmes and improve monitoring and evaluation of progress made in the implementation of the adopted policy documents in order to provide regular feedback for revision (Recommendation 1.2). This recommendation is still valid as it is not yet implemented due to the lack of
coherence in policy planning and implementation status reporting to readjust related targets. Finally, the Recommendation 1.3 is partially implemented as inter-ministerial cooperation mechanisms are established in numerous legal acts providing details on functions of different inter-ministerial bodies such as committees, commissions, and steering bodies. However, over-regulation in this context prevents ad-hoc cooperation as public officers often have to obtain an authorisation to communicate various issues with colleagues from other institutions.

Since 2012, 30 SEA procedures were completed in Romania for plans and programmes at the national and regional level, while some were started in the period 2016–2017 and are not completed yet.

In the period between 2012 and 2020 the composition of the ministry responsible for environment protection has been changed eight times. It shows instability of the central part of the institutional framework for environment protection in terms of leadership, scope of responsibilities and prioritised sub-sectors. Strict division of responsibilities among different ministries or sectors is noticeable throughout both legal and policy framework. In contrary, the Ministry of Environment, Waters and Forests maintains an efficient interlinkage with institutions subordinated to it or under its authority.

Conclusions and recommendations

Ensuring public participation in environmental decision-making

Romania is a party to the Aarhus Convention and the Law No. 52/2003 on transparency of decision-making in the public administration with subsequent amendments grants to its citizens participation in decision making in environmental matters, which is an essential part of developing a sustainable future through promotion of environmental justice. However, numerous environmental issues in Romania are resolved by GEOs which are not subject to mandatory public debate.

Recommendation 1.1:
The Government should ensure that every legal act on environmental matters is adopted in accordance with Aarhus Convention provisions, allowing public participation in decision-making, and not through government emergency ordinances.

Broadening the use of the Regulatory Impact Assessment scheme

Regulatory Impact Assessment-related procedures were introduced in Romania in 2005 and were amended until 2015. According to GD No. 1361/2006, RIA should assess the impact on the environment. However, the use and the quality of RIA remain highly uneven, and many RIAs are superficial. RIA procedures are usually used at a very late stage of legal drafting, justifying the need of additional regulation, leading often to over-regulation instead of a results-oriented legal framework. While the Strategy for Better Regulation 2014–2020 foresees the implementation of the extended RIA process and the 2018 National Reform Programme stresses the Government’s commitment to improve RIA, as at December 2019 no improvements have taken place.

Recommendation 1.2:
The Government should ensure that the scheme of Regulatory Impact Assessment is broadly applied to environment-related regulations to enable and facilitate their implementation, and that relevant systematic capacity-building activities for line ministries are put in practice.

Codification of environmental legislation

Key environmental legal acts in Romania have passed through numerous amendments during the last two decades, creating a patchwork of laws, emergency ordinances and other legal acts, and making the environmental legal framework unnecessarily complicated and lacking in clarity and coherence. Romania has already recognized the need to simplify legislation through the Strategy for Better Regulation 2014–2020. Maintaining a simple and understandable legislative framework could greatly contribute to the efficiency and effectiveness of the implementation of the environmental legislation.
Recommendation 1.3
The Government should consider revisiting and codifying environmental legislation in order to consolidate existing environmental laws and regulations and harmonize their terminology, principles and provisions.

Improvement of the policy framework

The policy framework is made instable, inconsistent and weak by frequent changes in policy directions, the common practice of developing completely new strategic documents instead of reviewing the existing ones, long SEA and adoption procedures and the failure to ensure financial support for the implementation of adopted policies by connecting them to the budgetary cycles. Incoherent policy planning is not only present between sectors and subsectors, but also internally. For example, new policy documents on the same topic are often developed long before the expiry of the previous document, rarely referring to the effects of the preceding policy and lessons learned. In addition, the implementation of policy documents is not monitored and reported. Moreover, no analysis of their effects is carried out, which puts in jeopardy further policy planning based on results and evidence, especially in terms of aligning the policy framework with the 2030 Agenda.

Recommendation 1.4
The Government should:

(a) Ensure the continuity and coherence of environmental policy planning;
(b) Establish efficient and effective mechanisms for inter-ministerial cooperation across all relevant ministries and offices;
(c) Consider mechanisms for accelerating the adoption of draft strategic documents, while complying with strategic environmental assessment and public participation procedures;
(d) Ensure capacity building of experts engaged in SEA procedures and accreditation of SEA consultants;
(e) Coordinate cycles of strategic and budgetary planning, ensuring funding for adopted or approved environment-related strategic documents;
(f) Demand, through legal acts on the approval of policy documents, regular and systematic reporting on the implementation of adopted or approved strategic documents through measurable indicators and precise target values set in these policy documents;
(g) Support the Department for Sustainable Development to ensure policy coherence for sustainable development through systematic analysis of the existing policies and provision of clear guidance on the integration of Sustainable Development Goals into sectoral policies, considering cross-sectoral linkages, ensuring that policies in different sectors are mutually supportive and avoiding uneven levels of harmonization of different sectors with respect to the 2030 Agenda.
Chapter 2

REGULATORY AND COMPLIANCE ASSURANCE MECHANISMS

2.1 Permitting and licensing, including public participation

Single-medium permitting

An environmental permit is issued for new developments and existing facilities not subject to an integrated environmental permit. Until 2018, environmental permits were valid for five years. In 2019, an annual visa system was introduced.

Environmental permits cover matters such as water quality protection, protection of the atmosphere, protection against noise and vibration, protection of the soil and the subsoil, radiation protection, protection of the forest estate, ecosystem protection, biodiversity and nature protection, waste and packaging management, management of dangerous substances and preparations, compatibility with urban and spatial plans, protection of human settlements and compliance with the provisions of international conventions to which Romania has acceded.

The number of environmental permits issued has declined significantly over the past 12–13 years, from 20,272 in 2007, to 14,077 in 2012 and 4,398 in 2018 (figure 2.1). There was an uptick to 7,074 permits in the first 9 months of 2019, caused by the new legislation introducing the annual visa, which also required that existing permits be submitted on the anniversary of the date on which they were originally granted. It is too early to say whether this will represent a long-term increase in workload.

Figure 2.1: Environmental permits issued by NEPA and its local branches, 2007–2019, number

Source: NEPA, 2019.
Note: * to October.

NEPA produces annual activity reports, including useful statistics on permitting and other matters, available on its website. Initially, in 2013 and 2014, the reports were unwieldy (1,231 and 1,199 pages, respectively) and, as a result, not of use. Recent years have seen a change of practice, with more concise reports (65 and 84 pages in 2018 and 2019, respectively) uploaded in a sufficiently clear format to allow searching and the extraction of data.

On receiving an application for a new development, the competent authority must first carry out a preliminary assessment, generally desk-based, to determine whether to consider the application under the environmental impact assessment (EIA) legislation. Only about one in ten applications is subject to subsequent EIA screening. If the development is found to require EIA, the EIA procedure continues with a scoping exercise and will culminate in the issuance of an environmental agreement. Only once any construction has been completed does
the environmental permitting procedure continue with site verification and the issuance of the environmental permit.

For a new development, the competent authority checks the request for the environmental permit, including that it has been made public, assesses compliance with the requirements of the environmental agreement obtained (if any), verifies the site conditions and makes public the decision to grant (or not) the environmental permit. That decision may be appealed within 15 working days from the date of publication.

For an existing facility, until the introduction in 2019 of the legislation on the annual visa, the competent environmental authority required the proponent to undertake an “environmental balance” of the facility, which is in effect an environmental audit. The report containing the conclusions of the environmental balance was subject to public debate, possibly including a public hearing. After the public debate, the environmental authority convened a meeting of Technical Review Committee to consider the results of the environmental balance and the conclusions of the public debate and to decide whether the environmental permit was to be issued, with or without a compliance programme. The decision was then made public. The decision may be appealed within 30 working days from the date of posting.

The new legislation on the annual visa specifies that “the purpose of applying the annual visa is to confirm that the holder carries out the activity under the same conditions for which the environmental permit or the integrated environmental permit was issued and that no changes have been made that affect the conditions established by the regulatory acts”. The procedure for the annual visa was established through the adoption of the Ministerial Order on the procedure for applying the annual visa for environmental permits and integrated environmental permits (No. 1150/2020).

All decisions regarding permits must be posted on the relevant authority’s website, and this was observed to be the case for the Brașov County “local” branch of NEPA (hereinafter LEPA) in December 2019, for example. LEPAs are also required to upload all data into a NEPA-wide database, but this is not feasible in practice, because of the data volumes involved. In Brașov County, citizens participate actively in public hearings and do appeal against decisions taken on permits and licences, though not in court.

The issuing authority can suspend an environmental permit when its provisions are not respected. The developer has up to 60 days to respond to the obligations, before being suspended. The suspension is kept in place until the problems are resolved, but for no more than six months. If the problem persists after six months then the environmental agreement, the environmental permit or integrated environmental permit is revoked.

The opportunities provided for public participation are widely criticized regarding both permitting and integrated permitting. Non-governmental organizations (NGOs) consistently complain that the invitation to a public hearing comes late and no agenda is issued, information is not available or is incomplete, no minutes of the public hearing are produced or the public’s views are not properly reflected, the public’s voices are not heard, their opinions are not taken into account or no justification is provided for why views were not taken into account. Civil society considers that the presence of NGOs and the public is noted only to show that effective opportunities for public participation have been provided, without actually providing such.

Waste generation and disposal

Ordinary generation of waste is covered by an environmental permit. All units or companies carrying out waste treatment activities are obliged to obtain an integrated environmental permit issued by the competent environmental authorities. The register, maintained by NEPA, of operators not subject to environmental authorization according to the provisions of the waste law includes: (i) waste merchants who do not physically enter the possession of the waste; (ii) waste brokers; (iii) road transporters of non-hazardous waste; and (iv) economic operators that are either recovering waste or disposing of their own non-hazardous waste at the place of production.

Use of natural resources

Permits are required for harvesting (logging), whether regenerative or maintenance cutting. The permits are based on volume estimates made by the enterprise’s forest engineer. No harvesting of forest products, including timber,
Chapter 2: Regulatory and compliance assurance mechanisms

is allowed in protected areas. However, harvesting of timber and other non-timber forest products is allowed in certain categories of natural protected areas, depending on the objectives of their conservation and their internal zoning, which configures the management regime.

Numerous successful court cases have been brought against authorized logging. For example, three cases led to the annulment in 2015 of environment permits for the felling of forest over a total of 369 hectares intended to allow for the expansion of surface mining of lignite.

Hunting management entities, such as hunting associations, RomSilva, INCDS and universities, manage 22 million hectares of hunting land, comprising 2,150 small hunting areas. They are licenced by the Ministry of Environment, Waters and Forests. The hunting associations do not own the land, only the hunting rights, and the fauna belong to the State. A hunting association manages each of these in accordance with a contract concluded with the Forest Guards. The Ministry establishes the annual hunting quota, based on an assessment made by the hunting associations, and then issues a MO accordingly. NGOs question this methodology and believe that the assessment overestimates populations because of the economic interests of the hunting associations. Individual hunters then pay the hunting associations an annual membership fee (for example, about 2,000 lei) as well as per head for larger hunted species. They are licenced by their hunting association, which authorizes hunting within the limits imposed by the quota.

Use of underground resources, including groundwater and mineral resources

The National Agency for Mineral Resources is responsible for issuing prospecting permits against a fee, valid for between one and three years, without the right to extension, and which are non-exclusive: several operators can be issued permits for the same geographical area. The operator must carry out a certain amount of work with a minimum value, as negotiated with the National Agency and set out in the permit. In addition, the National Agency issues annual production permits for limited mineral resources such as useful rocks, peat and alluvial gold.

Ozone-depleting substances

NEPA is responsible for permits and licences related to the production, import, export, placing on the market, use, recovery, recycling, regeneration and destruction of substances that deplete the ozone layer, further to the Montreal Protocol on Substances that Deplete the Ozone Layer and the corresponding EU regulation.

Radioactive sources

The number of licensed radioactive sources (excluding nuclear fuel) has experienced a gradual increase from 5,311 in 2012 to close to 6,000 today (figure 2.2). Permits are valid for five years.

![Figure 2.2: Licensed radioactive sources, 2012–2019, number](chart)


Note: * to 30 October 2019
Integrated permitting

The 2013 integrated permitting legislation provides for the setting of emission limit values, which are based on the best available techniques (BAT) without prescribing the use of any technique or specific technology. As for single-medium permitting, an integrated environmental permit may be suspended by the issuing authority if the operator does not comply with its provisions, after a prior notification.

The number of so-called IED installations has risen by 17 per cent from 2012 to 2018 (figure 2.3). In 2015, 48 per cent of IED installations were for the intensive rearing of poultry and pigs; the picture (figure 2.4) has changed dramatically since 2004 when the energy sector represented 26 per cent of integrated pollution prevention and control installations.

Until 2018, integrated environmental permits were valid for 10 years. Like for single-medium permitting, with the introduction in 2019 of the new legislation on the annual visa, the renewal procedure for an existing facility is unclear but it appears to reduce scrutiny. However, changes to BAT should filter through to revised permit conditions more rapidly.

![Figure 2.3: IED installations, 2012–2018, number](source: NEPA, 2019.)

![Figure 2.4: IED installations by type, 2015, percentage](source: EC and Ministry of Environment, 2019.)

The legislation provides for agreements with other EU Member States for activities with possible transboundary effects. Accordingly, Romania notified Bulgaria about a chemical fertilizer plant for which an integrated environmental permit was to be issued. Bulgaria responded that it was satisfied with the information provided and did not need a bilateral agreement.
The legislation also provides for appeals against permitting decisions. Any person who is part of the interested public and who has a legitimate interest, or is considered to have had their rights infringed, can appeal to the competent administrative court. Relevant NGOs are included.

**Licensing**

**Fishing**

For marine fisheries, quotas are determined by the EC within the Common Fisheries Policy, whereas for freshwaters Romanian scientific research institutes calculate maximum allowable catches of different species. Commercial fisheries are licenced for four years, though with an annual visa.

**Water abstraction and wastewater discharge**

Licences for water abstractions and discharges are valid for five years.

**Use of natural resources**

Logging companies must be licensed, though natural persons can exploit on their own account a maximum volume of 20 m$^3$ per year from their own forests without a licence.

**Use of underground resources, including groundwater and mineral resources**

Exploration licences are awarded for a maximum of 5 years and can be extended by a maximum of three years, whereas production (or operating or exploitation in the case of minerals) licences are for up to 20 years and can be extended by multiple 5-year periods. Exploration and production licences require the deposit of a financial guarantee with the Ministry of Economy to cover environmental rehabilitation costs. Production licences follow bilateral negotiations on the operations. Licences are protected by commercial confidentiality, but concession perimeters are publicly available, as are lists of concession agreement holders (51 on 30 October 2018). On 13 May 2019, the National Agency listed 22,816 mining licences, with 88.8 per cent being for “useful rocks” (not sand and gravel), 3.1 per cent for waters (such as mineral water), 2.0 per cent for various metals, 1.4 per cent for coal, 1.4 per cent for geothermal and 1.3 per cent for ornamental rocks.

**Radioactive sources**

Licenses for the use of radioactive sources are issued by the National Commission for Nuclear Activities Control according to its own procedure. The number of licenses has seen a slight rise over the period from 2012 (figure 2.5).

## 2.2 Environmental impact assessment, including public participation

**Domestic context**

Major changes have been made to the procedure for EIA since 2012. The EIA procedure comprises the screening and scoping stages, the elaboration of the EIA report and the quality review of the report. These stages are preceded by an initial evaluation of the project, done by the competent environmental authority, to identify the location of the project relative to natural protected areas and whether the project is developed on water or in relation to waters and needs a water approval.

The EIA procedure for a proposed activity leads, if successful, to an environmental agreement, which is an administrative act issued by the competent environmental authority and forming part of the development consent. The development consent itself varies in form depending on the proposed activity being, for example, a construction permit, an agreement for the use of land for intensive farming, a MO for deforestation or a water rights permit.
Once a development subject to EIA has been finalized, an inspection is organized, together with NEG, to check that it is in compliance with the conditions from the environmental agreement. All the findings are written in a report, which is signed by the environmental competent authority for the EIA procedure, the Guard and the developer. This report is given to the developer and it becomes part of the report for the reception of the finalized works. The report is also part of the dossier submitted by the operator when requesting the environmental or integrated environmental permit.

In a significant move, in 2016 and following pressure from civil society, NEG requested a fresh EIA of hydropower plans in a national park, on the Jiu River, in line with legislation passed since the original approval of the project in 2003. The State enterprise developing hydropower appealed against this decision but, in October 2017, the Bucharest Court of Appeal withdrew the construction permit. Pending the appeal, construction continued.

Very many development applications are subject to initial assessment, with, for example, the local authority issuing 3,759 notifications to the Braşov LEPA in 2018. The initial assessment is normally done as a desk study and, only if it seems likely that the project should be considered within the EIA process, including screening, is a site visit carried out. If so, decided by the Technical Review Committee, on the advice of LEPA, the project is subjected to the EIA screening process. The EIA screening process reduces further the number of developments that are subject to EIA; in the example from Braşov in 2018, 269 EIA screening decisions were taken. There may be a tendency to over-apply – to make developments subject to EIA that perhaps did not really require such – though this situation is preferable to that of under-applying. On the other hand, some developers attempt to “salami slice” projects so that they fall below the threshold for EIA. The Braşov LEPA reports encountering poor quality or incomplete EIA documentation and having to request more information repeatedly.

Experts preparing the EIA must be accredited according to the themes covered, for example, to undertake a water impact assessment, prepare a security report in line with Council Directive 82/501/EEC on the major-accident hazards of certain industrial activities (Seveso Directive) or undertake a Habitats Directive appropriate assessment. For some smaller consultancies, this requirement may limit their ability to bid for carrying out EIA of complex development projects.

Various means of publicity are mentioned in law and practice, including announcements on LEPA websites, though traditional means, such as posters on lampposts, may be neglected. According to the Ministry, EIA documentation is kept online by LEPA during the process; however, this was not observed in Braşov or at the NEPA at the national level. The Ministry keeps documentation online for longer, for example for nuclear power-related activities and the Rosia Montana gold mine. The new EIA law makes clearer to the authorities that the public interest is of primary importance and that they should qualify information as confidential in a restrictive way and must publicly explain why any information was qualified as confidential.
This last point responds to one of several recommendations to Romania made by the Meeting of the Parties to the Aarhus Convention at its fifth session in 2014 and sixth session in 2017: to take the necessary legislative, regulatory, administrative or practical measures to ensure that public officials interpret the grounds for refusing access to environmental information in a restrictive way, taking into account the public interest served by disclosure, and in stating the reasons for a refusal to specify how the public interest served by disclosure was taken into account. In addition, the Aarhus Convention’s Compliance Committee found that Romania failed to comply with the Convention by not providing for any public participation in the procedure for issuing an archaeological discharge certificate. Further, the Meeting of the Parties recommended that Romania review its legal framework in order to identify cases where decisions to permit activities within the scope the Convention are conducted without effective participation of the public and take the necessary legislative and regulatory measures to ensure that such situations are adequately remedied.

NGO concerns regarding public participation in EIA procedures, in public hearings and access to information, are similar to those mentioned for permitting, such as, late invitations, lack of agenda, lack of information, lack of minutes, inadequate recording and taking into account of public’s opinions. The authorities view public hearings somewhat differently, finding them challenging and sometimes threatening. At the same time, all agree that the public is often active and engaged and that their comments, when considered, lead to improvements in EIA documentation. The public may find it difficult to comment at the scoping stage and the results of scoping tend to vary county to county. There is consensus that current IT systems are inadequate, particularly for the handling of large EIA reports.

Generally, public hearings are organized and moderated by a LEPA. Both the Ministry and the Braşov LEPA described the good practice of noting all comments and identifying who and how points were subsequently answered – directly in the hearing; or later by the EIA author, operator or authorities – and posting the comments and responses on the authority’s website.

Once the EIA documentation has been completed, and been subject to a public hearing, the Technical Review Committee meets. All members express their points of view on all documents, such as the appropriate assessment for habitats, security report under Seveso, IED requirements, water impact assessment and the EIA report. The points of view are considered by the environmental authority, for integration into the EIA report, the project or the conditions imposed in the environmental agreement. Romanian Waters has to take a water management decision before the environmental agreement is concluded. The environmental authority takes the ultimate decision, considering the points of view of the other authorities.

The environmental agreement then forms part of the dossier submitted to the county council, or local council with advice from the county council, in the application for the construction permit. Similar approaches are taken, for example, for the water management permit needed prior to construction. As for environmental permits, the issuing authority can suspend an environmental agreement when its provisions are not respected.

In the period since 2012, legislation was passed that waived environmental protection laws for certain projects of national importance. The passing of these laws and the way this was done proved highly controversial. The primary case relates to subregional gas pipeline projects. Initially, the plan had been to pass special legislation to accelerate the project for the development in Romania of the National Gas Transmission System on the Corridor Bulgaria-Romania-Hungary-Austria. The final legislation was broadened to projects of national importance in the field of natural gas.

The belief was that development of such a nationally important project should not be held up by local planning decisions. Accordingly, the law allows, among other things, for State forestry lands to be temporarily removed from forestry use and made available to the project, construction in national and natural parks (with the favourable opinion of the Ministry of Environment, Waters and Forests), issue of the main construction permit and some other permits within 15 days of the request, and a simplified procedure for conducting archaeological research, issuance of the required permits and issuance of the certificate for archaeological discharge. Given the international concerns regarding public participation in the procedure for issuing the archaeological discharge certificate, this last accelerative measure is of particular concern.

There is also concern among NGOs about whether adequate assessments are carried out prior to logging in national and natural parks. For example, they have alleged that Romsilva, while managing 22 of the country’s 29
such parks, has been logging old-growth and primaevul forests without the analysis required under the EU Habitats and Birds Directives.

**Transboundary context**

The transboundary EIA procedure is overseen by the Ministry of Environment, Waters and Forests, with the domestic procedures being implemented by different authorities, depending on the level (Ministry, NEPA, LEPA or DDBRA). The environmental approval and environmental agreement are valid for the whole project implementation period. Recent cases are summarized in table 2.1. Romania, like most countries employing a transboundary EIA procedure, has encountered problems with the quality of translation of EIA documentation and the lack of translated versions of additional materials to which the EIA report refers. Consultations between national authorities sometimes lead to delays. Public hearings regarding nuclear power projects are particularly challenging because of the strong concerns voiced by NGOs and the public.

Romania is the depositary of the Multilateral Agreement among the Countries of South-Eastern Europe for Implementation of the Convention on Environmental Impact Assessment in a Transboundary Context. The agreement was adopted in 2008 having been negotiated between Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania and Serbia. Romania ratified this agreement in 2012, following its entry into force in 2011. In addition, Romania and Ukraine are in consultations regarding the drawing up of a bilateral agreement between the two countries on the implementation of the provisions of the Convention. These agreements facilitate the transboundary EIA procedure.

The Government has responded positively to the China’s Belt and Road Initiative and, in 2015, was the first country to sign a memorandum of understanding on the promotion of the joint construction of the Silk Road Economic Belt (as it was then known). Officials have expressed an interest in linking the Initiative to the EU Danube Strategy. However, this common interest has yet to be translated into investment in concrete projects requiring EIA.

### 2.3 Environmental standards

The main standards are produced by EU or ISO. National standards fill certain gaps. There used to be more national product standards, but the National Standardization Body (ASRO) lacks the resources to maintain these and anyway has to take care not to establish national standards that might inhibit the single market within the EU. Therefore, national standards tend to be stricter but voluntary, except for some Romanian products destined for the Romanian domestic market.

**Emission standards**

In terms of emissions and ambient quality standards, substance standards are set by EU and ISO, whereas some methodological standards are national. Most national methodological standards have nonetheless been withdrawn because they referred to outdated equipment or reagents. The series of EC Implementing Decisions establish the BAT conclusions regarding the Industrial Emissions Directive for a range of emission sources, such as the intensive rearing of pigs and the production of cement. Each of these decisions sets out a series of BAT-associated emission levels that act as emission standards.

**Air**

For permits, air emission standards are set both by media-specific legislation and by the integrated emissions legislation, which refer in turn to EU ambient standards and BAT. As made clear in the integrated emissions legislation, the authority responsible for issuing the integrated environmental permit establishes emission limit values that ensure that, under normal operating conditions, the emissions do not exceed the emission levels associated with BAT. In addition, in areas where the ambient air quality limit values are exceeded for one or more pollutants, LEPA may set stricter emission standards than otherwise provided by the legislation, according to the Law on Ambient Air Quality.
Table 2.1: Transboundary EIA cases, 2016–2018

<table>
<thead>
<tr>
<th>Project</th>
<th>Country of origin</th>
<th>Affected country (not exhaustive list)</th>
<th>Date of notification</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Oil Recycling Plant, Oltenița</td>
<td>Romania</td>
<td>Bulgaria</td>
<td>June 2017</td>
<td>Public hearing on 31 August 2018. On-going procedure.</td>
</tr>
<tr>
<td>Waste incinerator and mobile constructions placed in Arad, TPP area</td>
<td>Romania</td>
<td>Hungary</td>
<td>April 2017</td>
<td>Hungary did not express wish to participate in procedure. National procedure continued without it.</td>
</tr>
<tr>
<td>Site extension of intermediate spent fuel storage and continued construction of modules in Cernavodă NPP</td>
<td>Romania</td>
<td>Bulgaria</td>
<td>February 2017</td>
<td>Procedure was suspended. Procedure postponed until adoption of zonal urban plan for the bridge. The EIA procedure will likely be restarted.</td>
</tr>
<tr>
<td>Bridge over Tisa in Teplița area on Sighetu Marmatiei</td>
<td>Romania</td>
<td>Bulgaria</td>
<td>March 2017</td>
<td>Romania awaits environmental report.</td>
</tr>
<tr>
<td>Construction of Wind Farm Kostolac</td>
<td>Romania</td>
<td>Ukraine</td>
<td>March 2016</td>
<td>Romania decided not to participate in the procedure, considering the low transboundary impact of the project.</td>
</tr>
<tr>
<td>Extension of bulk and general cargo terminal at the Port of Smederevo</td>
<td>Serbia</td>
<td>Romania</td>
<td>September 2018</td>
<td>Public hearing on 3 October 2018</td>
</tr>
<tr>
<td>Rivne NPP</td>
<td>Serbia</td>
<td>Romania</td>
<td>2018</td>
<td>Final decision on 14 December 2018</td>
</tr>
<tr>
<td>Construction of new block B3 on site of Kostolac B TPP</td>
<td>Ukraine</td>
<td>Romania</td>
<td>February 2018</td>
<td>Romania awaits environmental report.</td>
</tr>
<tr>
<td>Zaporizhzhya NPP and South Ukrainian NPP</td>
<td>Serbia</td>
<td>Romania</td>
<td>July 2017</td>
<td>Public hearing on 27 February 2018.</td>
</tr>
<tr>
<td>Gravel and sand extraction from alluvial sediments in bed of Danube River, Mishka section</td>
<td>Ukraine</td>
<td>Romania</td>
<td>March 2017</td>
<td>Public hearing on 24 November 2017.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Final decision in September 2017.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Public hearing on 9 June 2016.</td>
</tr>
</tbody>
</table>


Notes: NPP – nuclear power plant; TPP – thermal power plant

**Water**

Emission limit values to water are aligned with the Water Framework Directive and as established under other directives. The Directive 2013/39/EU amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy text with European Environment Agency (EEA) relevance (Priority Substances Directive), revised in 2013, sets environmental quality standards on water policy repealing a series of earlier directives regarding water standards.

Standards for emissions (or discharges) to water are also provided by the EU legislation. For example, discharges from urban wastewater treatment plants are subject to the standards included in the Urban Wastewater Treatment Directive.

**Noise**

In 2014 and 2018, two orders of the Minister of Health set a series of ambient noise levels, including for residential zones in different locations (inside and outside houses, for example), times (day and night) and durations. The 2018 Order expanded the scope of the 2014 Order by including, for example, production areas and restaurants. The revised Order reflects Standard SR 10009:2017 Acoustics. Permissible noise level limits in the environment, which sets the permissible limits of the external noise level, differentiated by functional areas and spaces.

**Ambient quality standards**
Part I: Environmental governance and financing

Air

No significant changes have been made to ambient air quality standards since 2012. The Directive 2008/50/EC on ambient air quality and cleaner air for Europe (Air Quality Directive) sets ambient air quality standards, such as for particulate matter (PM$_{2.5}$ and PM$_{10}$), ozone (O$_3$) and nitrogen dioxide (NO$_2$). These are compared in table 2.2 against the WHO Air Quality Guidelines, which are sometimes stricter. The Law on Ambient Air Quality refers to multiple EU standard methods for the measurement of pollutant concentrations in ambient air and to national standard STAS 12574/1987 on air quality in protected areas.

Table 2.2: Comparison of EU and WHO ambient air quality standards

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging period</th>
<th>Air Quality Directive</th>
<th>WHO Air Quality Guidelines (Global update 2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concentration</td>
<td>Comments</td>
<td>Concentration</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>Annual</td>
<td>20</td>
<td>Limit value from 1 January 2020</td>
</tr>
<tr>
<td></td>
<td>24-hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>Annual</td>
<td>40</td>
<td>Limit value</td>
</tr>
<tr>
<td></td>
<td>Daily</td>
<td>50</td>
<td>Limit value. Not to be exceeded more than 35 times a calendar year</td>
</tr>
<tr>
<td>Ozone (O$_3$)</td>
<td>Daily</td>
<td>120</td>
<td>Target value. Not to be exceeded on more than 25 days per calendar year averaged over 3 years. Daily maximum 8-hour mean</td>
</tr>
<tr>
<td>Nitrogen dioxide (NO$_2$)</td>
<td>Annual</td>
<td>40</td>
<td>Limit value</td>
</tr>
<tr>
<td></td>
<td>Hourly</td>
<td>200</td>
<td>Limit value. Not to be exceeded more than 18 times a calendar year</td>
</tr>
</tbody>
</table>

Note: All concentrations in $\mu$g/m$^3$

Water

Ambient water quality standards have been revised since 2012 based on the provisions of the Water Framework Directive.

In addition, Romania abides by other EU water standards such as for bathing, natural mineral and drinking waters. The standards set in the Council Directive 98/83/EC on the quality of water intended for human consumption (Drinking Water Directive), as revised in 2015, are generally based upon the WHO Guidelines for Drinking-water Quality, though the latter are more comprehensive. Table 2.3 compares EU and WHO guidelines for chemical parameters listed in the Directive, with generally either the two being the same or the EU standard being stricter. The Directive also specifies values for two microbiological parameters – *Escherichia coli* and *Enterococci* – both at zero per 100 ml.

Soil

Soil contamination is addressed in a MO that sets reference values for traces of chemical elements in the soil, including alert and intervention thresholds. In 2019, the order was supplemented by a law on the management of contaminated sites, though without setting new ambient quality standards.

Product standards

Food

As a member of the EU, the country implements the 2002 European Council Regulation that established the European Food Safety Authority and laid down procedures in matters of food safety.

Construction materials
Romania implements the EU Construction Products Regulation to set standards for construction materials. Romanian legislation, including changes in 2018, then identifies the latest individual standards. These are primarily harmonized quality standards to facilitate the internal market of the EU, though they also include safety standards, such as fire detection and alarm systems and fixed firefighting systems. The standards are not directly related to environmental protection.

Table 2.3: EU chemical standards for drinking water, with corresponding WHO guidelines

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>EU parametric value</th>
<th>WHO guideline value</th>
<th>Stricter standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylamide</td>
<td>µg/l</td>
<td>0.10</td>
<td>0.5</td>
<td>EU</td>
</tr>
<tr>
<td>Antimony</td>
<td>µg/l</td>
<td>5.0</td>
<td>20</td>
<td>EU</td>
</tr>
<tr>
<td>Arsenic</td>
<td>µg/l</td>
<td>10</td>
<td>10</td>
<td>Same</td>
</tr>
<tr>
<td>Benzene</td>
<td>µg/l</td>
<td>1.0</td>
<td>10</td>
<td>EU</td>
</tr>
<tr>
<td>Benzo(a)pyrene</td>
<td>µg/l</td>
<td>0.010</td>
<td>0.7</td>
<td>EU</td>
</tr>
<tr>
<td>Boron</td>
<td>mg/l</td>
<td>1.0</td>
<td>2.4</td>
<td>EU</td>
</tr>
<tr>
<td>Bromate</td>
<td>µg/l</td>
<td>10</td>
<td>10</td>
<td>Same</td>
</tr>
<tr>
<td>Cadmium</td>
<td>µg/l</td>
<td>5.0</td>
<td>3</td>
<td>WHO</td>
</tr>
<tr>
<td>Chromium</td>
<td>µg/l</td>
<td>50</td>
<td>50</td>
<td>Same</td>
</tr>
<tr>
<td>Copper</td>
<td>mg/l</td>
<td>2.0</td>
<td>2</td>
<td>Same</td>
</tr>
<tr>
<td>Cyanide</td>
<td>µg/l</td>
<td>50</td>
<td>none</td>
<td>EU</td>
</tr>
<tr>
<td>1,2-dichloroethane</td>
<td>µg/l</td>
<td>3.0</td>
<td>30</td>
<td>EU</td>
</tr>
<tr>
<td>Epichlorohydrin</td>
<td>µg/l</td>
<td>0.10</td>
<td>0.4</td>
<td>EU</td>
</tr>
<tr>
<td>Fluoride</td>
<td>mg/l</td>
<td>1.5</td>
<td>1.5</td>
<td>Same</td>
</tr>
<tr>
<td>Lead</td>
<td>µg/l</td>
<td>10</td>
<td>10</td>
<td>Same</td>
</tr>
<tr>
<td>Mercury</td>
<td>µg/l</td>
<td>1.0</td>
<td>6 (inorganic)</td>
<td>EU</td>
</tr>
<tr>
<td>Nickel</td>
<td>µg/l</td>
<td>20</td>
<td>70</td>
<td>EU</td>
</tr>
<tr>
<td>Nitrate</td>
<td>mg/l</td>
<td>50</td>
<td>50</td>
<td>Same</td>
</tr>
<tr>
<td>Nitrite</td>
<td>mg/l</td>
<td>0.50</td>
<td>3</td>
<td>EU</td>
</tr>
<tr>
<td>Pesticides</td>
<td>µg/l</td>
<td>0.10</td>
<td>Individual pesticides</td>
<td>-</td>
</tr>
<tr>
<td>Pesticides — Total</td>
<td>µg/l</td>
<td>0.50</td>
<td>Individual pesticides</td>
<td>-</td>
</tr>
<tr>
<td>Polycyclic aromatic hydrocarbons</td>
<td>µg/l</td>
<td>0.10</td>
<td>See benzo(a)pyrene</td>
<td>EU</td>
</tr>
<tr>
<td>Selenium</td>
<td>µg/l</td>
<td>10</td>
<td>40</td>
<td>EU</td>
</tr>
<tr>
<td>Tetrachloroethene and</td>
<td>µg/l</td>
<td>10</td>
<td>40 (tetrachloroethene) and 20 (trichloroethene)</td>
<td>EU</td>
</tr>
<tr>
<td>Trichloroethene</td>
<td>µg/l</td>
<td>100</td>
<td>300 (chloroform), 100 (bromoform), 100 (dibromochloromethane) and 60 (bromodichloromethane)</td>
<td>-</td>
</tr>
<tr>
<td>Trihalomethanes — Total</td>
<td>µg/l</td>
<td>100</td>
<td>300 (chloroform), 100 (bromoform), 100 (dibromochloromethane) and 60 (bromodichloromethane)</td>
<td>-</td>
</tr>
<tr>
<td>Vinyl chloride</td>
<td>µg/l</td>
<td>0.50</td>
<td>0.3</td>
<td>WHO</td>
</tr>
</tbody>
</table>


Toys

Standards for toys have also continued to evolve since 2012. EU standards, including changes in 2019, are used for toys. Most are available in Romanian, but ASRO has not been contracted to translate the remaining ones by the Ministry of Economy, which is the competent body in this matter.

2.4 Compliance assurance mechanisms

Self-monitoring and reporting by regulated entities

Self-monitoring by the operator of an activity has many benefits, including use of the operator’s knowledge of on-site processes, encouraging the operator to take responsibility for its own emissions and cost effectiveness.

When issuing environmental permits, the LEPA identifies soil, noise, all types of waste and all possible emissions to air, surface water and groundwater. Monitoring is imposed on each factor in the permit and the operator must use an accredited laboratory for any laboratory tests required.

For integrated environmental permitting, monitoring requirements are based upon the decision on the BAT conclusions, supplemented as necessary by monitoring requirements reflecting local conditions.
The environmental agreement drawn up subsequent to an EIA includes monitoring conditions setting out the parameters and duration of monitoring. The conditions must be proportional to the nature, location and size of the project, as well as the severity of its effects on the environment. The monitoring plan is drafted within the EIA report, but it can be adapted by the competent authority.

Self-monitoring reports must be sent to the LEPA, Romanian Waters and, as applicable, the Environment Fund Administration; Braşov LEPA, for example, did not indicate that permit-holders were failing to report on their self-monitoring. The LEPA monitoring department checks the monitoring report when submitted. If problems are detected, NEG is notified.

**Citizen monitoring**

NEG does not encourage citizen monitoring of environmental parameters as such monitoring is not recognized in court and NEG would have to repeat the measurements officially if taking enforcement measures. However, citizen complaints – or “petitions” – are an important source of information and are subject to specific national legislation, requiring, for example, a response within 30 days. In 2018, the Ministry of Environment, Waters and Forests received 1,671 petitions from the general public, whereas NEPA at the national level received 138.

The number of complaints to NEG at the national level are shown in figure 2.6; if a single complaint comes in, it is redirected to the county level but, if the problem persists, a team from headquarters might visit. The Braşov County branch of NEG received 624 emergency calls in 2018.

**Figure 2.6: Complaints to the NEG General Commissariat, 2012–2018, number**

Source: NEG, 2019.

**Environmental audit**

An environmental balance (a kind of compliance audit) is undertaken for an existing facility requesting a new environmental permit. The effect of the new legislation on the annual visa on this practice is unclear. In addition, organizations with certification against the ISO 14001 EMS standard must undertake audits of their environmental management systems if they are to retain their certificates. More generally, environmental audit is not a common practice.

**Inspections**

Environmental inspections are undertaken by various bodies, but primarily NEG at the county level.

NEG produces annual, meaningful activity reports available in a reasonably accessible format on the NEG website. NEG is responsible for inspecting about 90,000 activities with environmental permits. The number of
inspections has declined since 2012 (figure 2.7). However, importantly, there is no correlation between the reduced number of inspections and the number of enforcement actions, suggesting that more effective and targeted inspections are being done.

![Figure 2.7: Inspections by NEG, 2012–2019, number](source: NEG, 2019. Note: * to 30 September 2019)

The environmental inspections are performed with a certain frequency, depending on the risk classes and the performance of the operator. Operators who are compliant in terms of respecting emission limits as set out in their permit, reduce the number of complaints, implement measures and reduce their fines can achieve a change in class. The methodology for assignment to a class remains confidential.

The frequency of inspection has been reduced for each class of installation, with the MO No. 256/2014, which revised the procedures for carrying out environmental inspections (figure 2.8). This reflects the increasing complexity of the permits and inspections and satisfies in part the recommendation in the second EPR of Romania to the Ministry of Environment and Forests (at that time) to review systematically key elements of its compliance monitoring strategy to optimize the balance between quantitative and qualitative elements (Recommendation 2.3 to the Ministry of Environment and Forests to review systematically key elements of its compliance monitoring strategy to optimize the balance between quantitative and qualitative elements). The risk methodology was revised according to the Order and reflected in computer software; the methodology is based on the EU Network for the Implementation and Enforcement of Environmental Law (IMPEL) guide on Integrated Risk Assessment Method to support inspections of installations with integrated environmental permits.

![Figure 2.8: Inspection frequency per year by installation class, 2009, 2014, number](source: NEG, 2019.)
Inspections are either planned according to an annual plan, or unplanned (reactive), and may be announced or not (Table 2.4). Unplanned inspections, though they might not be considered as “unplanned” as such in other jurisdictions, are broken down clearly into different categories such as inspections: to verify the compliance with the conditions imposed in the regulatory acts; following NEG self-assessment; to resolve complaints; to investigate accidents or incidents with environmental impact; ordered by the Commissioner General at headquarters; for the issuance, extension or revision of regulatory acts; to identify new objectives; to verify the implementation of the required measures; and with other authorities (which can be either planned or unplanned).

NEG, at county level, carries out environmental inspections according to an annual plan that is approved by the Commissioner General at headquarters. The NEG General Commissariat elaborates an annual plan of the whole organization’s activities and proposes it for approval to the Ministry of Environment, Waters and Forests. The plans are not accessible to the public. Inspection reports are submitted to headquarters monthly and feed into the national activity reports. NEG reports to NEPA annually on accidental pollution. Until 2019, NEG headquarters undertook some routine inspections, of incinerators and installations with an integrated environmental permit, but, from 2020, these are taken over at the county level.

<table>
<thead>
<tr>
<th>Total</th>
<th>Pollution control</th>
<th>Nature conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned inspections</td>
<td>10,160</td>
<td>4,378</td>
</tr>
<tr>
<td>Unplanned inspections</td>
<td>21,501</td>
<td>3,802</td>
</tr>
<tr>
<td>of which</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspections to verify compliance with conditions in regulatory acts</td>
<td>-</td>
<td>766</td>
</tr>
<tr>
<td>Inspections following self-assessment by the Guard</td>
<td>657</td>
<td>424</td>
</tr>
<tr>
<td>Inspections due to complaints</td>
<td>4,639</td>
<td>543</td>
</tr>
<tr>
<td>Inspections to investigate accidents or incidents with an environmental impact</td>
<td>224</td>
<td>15</td>
</tr>
<tr>
<td>Regulatory inspections</td>
<td>-</td>
<td>127</td>
</tr>
<tr>
<td>Inspection on emissions</td>
<td>318</td>
<td>-</td>
</tr>
<tr>
<td>Inspections to verify implementation of measures</td>
<td>845</td>
<td>173</td>
</tr>
<tr>
<td>Inspections with other authorities</td>
<td>2,696</td>
<td>1,198</td>
</tr>
<tr>
<td>Identify new activities or installations</td>
<td>-</td>
<td>52</td>
</tr>
<tr>
<td>Thematic inspections</td>
<td>3,261</td>
<td>1,592</td>
</tr>
</tbody>
</table>

Source: NEG activity reports, 2019.

An inspection is done by a team of two commissioners, who review documents before the visit, looking at monitoring, complaints and their resolution, press reports and other sources before developing an inspection plan. After the inspection, the team reports against the relevant EU directives. The Guard’s reporting system, Artemis, is used to store information about inspections, archive inspections records and compare plans with actual inspections. Each commissioner carries out between 80 and 100 inspections each year. According to the law on integrated environmental permits, inspection reports are to be published, though personal data about operators are blanked out in respect of the EU General Data Protection Regulation. A planned inspection can take up to two weeks to complete.

NEG does not have its own laboratories for monitoring nor specialized personnel in this regard, relying instead on NEPA, Romanian Waters or the local public health department. If they too are unable to assist, for example in relation to accidental pollution, the Guard turns to a laboratory accredited by the Romanian Accreditation Association (RENAR). The Guard does not have privileged access to the national Pollutant Release and Transfer Register, which is managed by NEPA.

Joint inspections, carried out with other authorities, may be planned or unplanned and are based on collaboration protocols and the regulations. NEG joint inspections involve the Water Inspection Service of Romanian Waters, NANPA and the local health department. With the Forest Guards, the cooperation covers hunting and illegal wood processing (the illegal logging is handled by the Forest Guards), involving also the police and park authorities. NEG also cooperates with the police, border guards and customs, for example, regarding waste,
including illegal and medical waste, and chemicals, including hazardous substances (table 2.5). NEG, police and hunting associations address together the illegal killing of animals. NEG works with the economic police on hazardous substances and sand and gravel extraction, for which there are many unlicensed operations. Local police have some competence on waste, for which they can impose fines. There is also cooperation with local police on water pollution. Table 2.5 illustrates the responsibilities for compliance with chemical regulations.

### Table 2.5: Authorities responsible for carrying out official controls in relation to chemical regulations, in cooperation with NEG

<table>
<thead>
<tr>
<th>Sector</th>
<th>Other authorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biocides</td>
<td>Directorates of public health, sanitary-veterinary and food safety at the county level (or Municipality of Bucharest)</td>
</tr>
<tr>
<td>Electrical and electronic equipment</td>
<td>National Authority for Consumer Protection</td>
</tr>
<tr>
<td>Export-import</td>
<td>General Directorate of Customs</td>
</tr>
<tr>
<td>Phytosanitary</td>
<td>Phytosanitary Police</td>
</tr>
<tr>
<td>Explosive precursors</td>
<td>Romanian Police; National Authority for Consumer Protection</td>
</tr>
<tr>
<td>Mercury</td>
<td>General Inspectorate of the Romanian Police and the territorial units subordinated to it; National Customs Authority</td>
</tr>
</tbody>
</table>

*Source: NEG, 2019.*

NEG has observed an improvement regarding landfill infringements because a history of legal challenges makes it difficult for operators to access funds for remediation from the Environment Fund Administration. Annual thematic inspection campaigns may be based on any directive or law; in 2020 one campaign will relate to the Industrial Emissions Directive. The campaigns are decided upon by the Ministry of Environment, Waters and Forests or the NEG Commissioner General.

Romanian Waters annual inspections programme is thematic, as approved by a GD. Besides water abstraction and discharge points, the Water Inspection Service visits waste dumps to check for diffuse discharges to surface and groundwaters. Romanian Waters produces annual, meaningful activity reports available in a reasonably accessible format on the administration’s website, though only for 2013, 2015, 2017 and 2018. Table 2.6 illustrates the breakdown of planned or unplanned inspections by theme; table 2.7 shows the unplanned inspections by type. Overall, the Water Inspection Service inspected 9,808 activities in 2018 out of 27,997 listed in the National Basin Register of Controlled Objects. Earlier statistics are not available to examine trends.

### Table 2.6: Inspections by Romanian Waters by theme, 2018, number

<table>
<thead>
<tr>
<th>Theme</th>
<th>Planned</th>
<th>Unplanned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro-hydroelectric plants</td>
<td>403</td>
<td>43</td>
</tr>
<tr>
<td>Sand and gravel</td>
<td>1,140</td>
<td>417</td>
</tr>
<tr>
<td>Reservoirs with risk levels of normal and low (C and D)</td>
<td>678</td>
<td>170</td>
</tr>
<tr>
<td>Tailings ponds, Waste deposits, Sterile sludge</td>
<td>250</td>
<td>38</td>
</tr>
<tr>
<td>Industrial Emissions Directive</td>
<td>695</td>
<td>43</td>
</tr>
<tr>
<td>Water treatment and purification stations</td>
<td>1,730</td>
<td>249</td>
</tr>
<tr>
<td>Sanitation, hygiene</td>
<td>2,454</td>
<td>340</td>
</tr>
<tr>
<td>Use of groundwaters</td>
<td>1,355</td>
<td>199</td>
</tr>
<tr>
<td>Bridges, culverts, underpasses</td>
<td>190</td>
<td>62</td>
</tr>
<tr>
<td><strong>Total thematic controls</strong></td>
<td><strong>8,895</strong></td>
<td><strong>1,561</strong></td>
</tr>
<tr>
<td>Other situations *</td>
<td>1,989</td>
<td>1,327</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10,884</strong></td>
<td><strong>2,888</strong></td>
</tr>
</tbody>
</table>

*Source: Romanian Waters activity reports, 2019.*

*Notes: * Including smaller animal and poultry farms that do not fall under the Industrial Emissions Directive; petrol filling stations; car washes, local public authorities that have only water supply systems and various industrial units that do not fall under the Industrial Emissions Directive.

Other actors include local authorities and city halls. For instance, local authorities are informed about demolition waste when issuing a building permit and they should verify that builders comply with environmental conditions, for example, regarding dust, noise and the disposal of waste. However, these conditions are rarely followed up on by the local authorities, though they sometimes turn to the local NEG for assistance. A law is being drafted on construction and demolition waste to prevent dumping by construction companies.
The National Commission for Nuclear Activities Control carries out inspections and controls of radioactive sources and applies sanctions (Table 2.8). The Commission sees some problems with practices involving radiation sources especially in the medical sector where a lack in the safety culture is observed.

**Type 2.7: Unplanned inspections by Romanian Waters by type, 2018, number**

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspections following internal notifications (theft of mineral aggregates, water withdrawal without regulatory documents, etc.)</td>
<td>1,814</td>
</tr>
<tr>
<td>Inspections to resolve complaints (complaints and petitions)</td>
<td>1,075</td>
</tr>
<tr>
<td>Inspections for compliance with regulatory acts, for new projects or activities (water management permits and authorizations)</td>
<td>369</td>
</tr>
<tr>
<td>Inspections to investigate accidents or incidents with an impact on water (accidental pollution)</td>
<td>105</td>
</tr>
<tr>
<td>Inspections with other authorities</td>
<td>982</td>
</tr>
<tr>
<td>Other situations</td>
<td>2,970</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,315</strong></td>
</tr>
</tbody>
</table>

Source: Romanian Waters activity reports

**Table 2.8: Radioactive sources, inspections and controls, infractions observed and sanctions applied, 2012–2019, number**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspections and controls</td>
<td>1,314</td>
<td>1,585</td>
<td>1,070</td>
<td>1,460</td>
<td>1,454</td>
<td>1,372</td>
<td>1,578</td>
<td>1,274</td>
</tr>
<tr>
<td>Sanctions</td>
<td>43</td>
<td>47</td>
<td>35</td>
<td>76</td>
<td>61</td>
<td>101</td>
<td>102</td>
<td>83</td>
</tr>
<tr>
<td>Sanctions applied:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notices</td>
<td>20</td>
<td>19</td>
<td>23</td>
<td>36</td>
<td>27</td>
<td>50</td>
<td>54</td>
<td>57</td>
</tr>
<tr>
<td>Sanctions for contraventions</td>
<td>.</td>
<td>28</td>
<td>12</td>
<td>39</td>
<td>34</td>
<td>51</td>
<td>48</td>
<td>26</td>
</tr>
<tr>
<td>Exercising permit withdrawal</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Proposals for criminal sanctions</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: * to 31.10.2019

**Forests**

Since the carrying out of the second EPR of Romania, the nine regional Forest Guards were established in 2015, in response to revelations about the extent of illegal logging in the country and to the resulting public outcry. The following year saw a high of 248,507 controls, dropping back to 222,627 in 2018. 2013 saw 1.117 million cubic metres of illegally cut timber recorded, whereas the period 2014–2018 saw an average of 210,000 m³ (207,000 m³ in 2018), according to the General Directorate for Forests, though far larger figures up to 20 million m³ per year have also been reported. The number of contraventions and offences found is shown in figure 2.9.

**Figure 2.9: forestry contraventions and offences found, 2012–2018, number**

![Figure 2.9: forestry contraventions and offences found, 2012–2018, number](source)

*Source: General Directorate for Forests, 2019.*

Inspections in forestry involve the Forest Guards, Romsilva and forestry staff within other forest management structures. Inspections take the form of site visits but also reviews of office documentation. The Forest Guards
establish annual inspection plans at the Ministry and forest district levels. Risk-based maps support the planning. In the Bucharest region, for example, the Guards find it difficult to respond as there are scattered small areas of forest across the large plain around the city; visits are generally every one or two years. The Guards consider that responding to many of the citizen complaints, often involving just one or two trees being cut, is an inefficient use of limited resources. Even if the local police respond, the Forest Guards still need to check against forest management plans. The Ministry of Environment, Waters and Forests cooperates with the Ministry of Internal Affairs through a joint action plan to prevent and tackle crimes related to the transport, storage, processing and marketing of timber. Inspections also address nature protection issues.

In the forestry sector, the authorities have implemented two important IT systems since the second EPR of Romania. Since 2014, the transport of all wood products must be registered in its SUMAL (Woodland Vegetation Tracking System) database. The driver of the truck transporting wood must register the journey before setting off using a smartphone or other GPS-enabled device; if there is no cell phone cover at that point, the data is uploaded automatically as soon as the truck emerges from the forest. The forest authorities upgraded SUMAL in 2016 to create the Forest Inspector (www.inspectorulpadurii.ro), a user-friendly and public interface to the database in real time that can also be accessed using a mobile app (figure 2.9). However, one year later the Ministry blocked the update of information necessary for the operation of the app, resulting in thousands of false reports of illegal logging. In August 2019, the Bucharest Tribunal obliged the Ministry to compensate the app developer after blocking its use. Some functionality has recently been removed and less data is now available, whereas increased transparency had been anticipated. However, the functionality allowing the viewing of Sentinel satellite imagery, intended to overcome problems with illegal loggers tricking the GPS system, was operational in January 2020.

Fisheries

For marine fisheries, the National Agency for Fishing and Aquaculture undertakes coordinated controls with Frontex – the EU Border and Coast Guard Agency – and Black Sea riparian States. Because the National Agency has only small vessels, it also cooperates with the Coast Guard. The National Agency is exploring cooperation with Turkey.

Inland, the National Agency for Fishing and Aquaculture works with the Military Police (Jandarmeria Română) to protect the inspectors and the Transport Police to ensure transport of fish is properly documented. More generally, there is also good cooperation with the Ministry of Internal Affairs.

Bilaterally, the National Agency for Fishing and Aquaculture carries out joint inspections with Bulgaria since 2012, about 16 times a year, with about 6 visits from the European Fisheries Control Agency. On the Danube River, the same prohibition periods apply to some species in Bulgaria, Romania and Ukraine, so the National Agency also visits Ukraine, though the cooperation is at an early stage. The common prohibition periods are a result of agreements with Bulgaria in 2017 and Ukraine in 2018. In the Danube Delta, which is almost completely under the control of Romania, and in the Danube River in the stretch controlled by Bulgaria and Romania, the sturgeon population is being maintained and fisheries might reopen in two to three years, following the ban on commercial fishing of this species in the period 2016–2021.

SDG 14 (conserve and sustainably use the oceans, seas and marine resources for sustainable development) includes a target 14.4 (By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics). This target is expected to be achieved by 2020. The global indicator (14.4.1) is the proportion of fish stocks within biologically sustainable levels. At the EU level, the Common Fisheries Policy is the primary instrument to support target 14.4; no statistics in relation to this target have been published by the EU.

In Romania, a Multiannual National Strategic Plan for Aquaculture and an Operational Programme for Fisheries and Maritime Affairs 2014–2020 have provided a framework for action in line with target 14.4. The SDS 2030 foresees that the country will “Responsible and sustainably manage the fishing of wild and aquaculture species in accordance with the legally-established quotas and methods, and preserve, within reasonable limits, the viability of traditional activities in this field, including recreational and sports fishing” and “Involve other Black
Sea countries in the implementation of a responsible and sustainable plan for the exploitation of living aquatic species”. Both aims are being addressed, though no quantified measures are available.

**Sanitary-epidemiological**

The Ministry of Health’s State Sanitary Inspectorate coordinates inspection activities in the 41 counties and Bucharest municipality. At the end of each year, the Ministry defines thematic actions for the following year and, during the year, carries out cross-checks. The Public Health Directorate of Bucharest municipality, for example, has a Public Health Service including 40–41 health inspectors, with three quarters of the staff in one office inspecting health and risk factors in personal and professional life, and the remainder in a second office inspecting health and sanitary facilities. Each month, the inspectors review different types of facility. Besides scheduled checks, the inspectors respond to notifications by individuals, facilities or the Ministry, or if they otherwise find out that there is a problem. The inspectors in the first office visit schools, food producers, swimming pools and many other facilities. They respond to food poisoning – with the Ministry carrying out an epidemiology assessment – and have access to a fast-alert system. These inspectors also check food in educational centres and health facilities.

The Ministry of Health also oversees drinking water, mineral water and bathing water inspection and cooperates with the Ministry of Environment, Waters and Forests on the catchments for drinking water supplies. There is regular monitoring by the inspectors and the water companies of water supplies. Public swimming pools are subject to self-inspection every two weeks, but they must use an accredited laboratory.

However, there are some gaps in coverage with no authorizations for some products, such as food supplements that are produced in Romania or imported, so health inspectors can only react if there is a complaint. The Ministry would wish to link to trade databases to better control the import of such products.

After inspection, a report is submitted to Ministry of Health. Inspection is according to the Ministry’s specific methodology, timetable and target operators. The Ministry centralises results and uploads a report on its website. The Ministry also issues licences for laboratories to support monitoring and inspection. County directorates on water quality issue mandatory authorizations for medical units and water supplies and, upon request, certificates of conformity with sanitary conditions for restaurants and production units.

The Ministry of Health, and specifically the State Sanitary Inspectorate, produces annual, meaningful activity reports available in a reasonably accessible format on the Ministry’s website. There has been an overall drop in inspections by 32 per cent, with a halving of inspections in the food sector and a 99 per cent-drop in inspections related to tobacco products, but also the introduction of biocide product controls (table 2.9). In 2018, the Ministry paid attention to 8,929 complaints received from the public.

**Table 2.9: Controls on activities, as carried out by health inspectors, 2013, 2018, number**

<table>
<thead>
<tr>
<th>Control areas</th>
<th>2013</th>
<th>2018</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and materials in contact with food</td>
<td>52,767</td>
<td>27,027</td>
<td>-49%</td>
</tr>
<tr>
<td>Water quality for human consumption and water used for other human activities</td>
<td>10,948</td>
<td>12,486</td>
<td>+14%</td>
</tr>
<tr>
<td>Tourism units</td>
<td>3,110</td>
<td>3,978</td>
<td>+28%</td>
</tr>
<tr>
<td>Human habitat quality</td>
<td>18,842</td>
<td>12,634</td>
<td>-33%</td>
</tr>
<tr>
<td>Tobacco products (to producers and importers) and, in 2013, smoking in public spaces</td>
<td>59,593</td>
<td>760</td>
<td>-99%</td>
</tr>
<tr>
<td>Working environment</td>
<td>3,531</td>
<td>900</td>
<td>-75%</td>
</tr>
<tr>
<td>Units of production, storage and sale of cosmetic products</td>
<td>10,444</td>
<td>7,077</td>
<td>-32%</td>
</tr>
<tr>
<td>Product controls</td>
<td>27,864</td>
<td>23,007</td>
<td>-17%</td>
</tr>
<tr>
<td>Units for production, storage and sale of biocide products</td>
<td>31,298</td>
<td>27,138</td>
<td>-13%</td>
</tr>
<tr>
<td>Product controls</td>
<td>10,031</td>
<td>7,867</td>
<td>-24%</td>
</tr>
<tr>
<td>Educational units</td>
<td>19,093</td>
<td>17,449</td>
<td>-9%</td>
</tr>
<tr>
<td>Health units</td>
<td>21,093</td>
<td>13,440</td>
<td>-36%</td>
</tr>
<tr>
<td>Management of liquid and solid waste and especially potentially hazardous waste</td>
<td>14,980</td>
<td>10,629</td>
<td>-29%</td>
</tr>
<tr>
<td>Other</td>
<td>1,760</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeat controls of the planned units</td>
<td>3,717</td>
<td>3,806</td>
<td>+2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>277,280</strong></td>
<td><strong>188,958</strong></td>
<td><strong>-32%</strong></td>
</tr>
</tbody>
</table>
Chapter 2: Regulatory and compliance assurance mechanisms

Industrial safety

Since the second EPR of Romania, the legislation on major accident hazards was revised in 2016, following the entry into force of the latest “Seveso III” Directive in 2015. For an industrial establishment subject to the Seveso Directive, and thus to the national law, a Seveso inspection is carried out each year for upper-tier establishments and at least every three years for lower-tier ones, in addition to the inspections carried out according to the risk class. The competent authorities at the local level, which draw up an annual inspection plan and carry out the inspections, are the county branch of NEG and the county inspectorate for emergency situations. At the national level, the Ministry of Environment, Waters and Forests and its subsidiary bodies works with the General Inspectorate for Emergency Situations in the Ministry of Internal Affairs. The period 2015–2018 saw a steady rate of inspections, from 326 in 2015 to 309 in 2018. However, the period also saw a clear rise in the number of warnings, fines and suspensions (figure 2.10).

![Figure 2.10: Sanctions resulting from Seveso inspections, by type, 2015–2018, number](image)

Source: NEG activity reports, 2019.

Non-compliance response

The non-compliance response varies across environmental media and according to the severity of the non-compliance and other conditions. For example, breach of the environmental protection and water legislation and their prohibition of the discharge of polluting matter into water, except when permitted, may result in administrative fines of up to 100,000 lei and remediation measures imposed by NEG. Criminal liability may arise, for example, for wilful pollution with waste or dangerous substances, or failure to comply with restrictions or interdictions. Individuals may also seek in court under civil law the remediation of environmental damages suffered by them because of non-compliance by companies.

Sanctions have generally declined in number since 2012 in line with the reduced frequency of inspection, but there is evidence of a shift away from simple fines to more severe sanctions, both administrative (suspension of operations) and criminal. The legislation also provides for appeals to the competent administrative court against such decisions. The court’s decision can be subsequently appealed.

NGOs observe that a suspension is often itself suspended by the operator obtaining an injunction in court. This allows the polluting or harmful behaviour to continue and implies that the conditions for injunctive relief may not be relevant for environmental matters.

Some authorities have in-house legal expertise, though it is not always adequate. The Forest Guards have their own legal expertise to draw up cases, against guidelines. The National Agency for Fishing and Aquaculture lacks legal expertise for enforcement. NEPA has limited in-house legal expertise, with few qualified staff and many cases to be covered, while the LEPAs exchange information on infringements. The sanitary-epidemiological authority in Bucharest municipality relies on an external lawyer. And in the Brașov County NEG, a legal expert compiles a case having obtained agreement from headquarters in Bucharest on the technical (not political) issues.
The Government has not implemented the Recommendation 2.4 of the second EPR of Romania to increase the capacity to address environmental cases within existing judicial authorities and by organizational adjustments, such as the creation of dedicated environmental courts or environmental divisions within existing courts. Environmental cases are tried in normal courts. There are no specialized judges and very few environmental experts in court.

In Bucharest municipality, the sanitary-epidemiological authority goes to court for challenges of fines and suspensions. Cases typically last six months, or less. When the Ministry of Health goes to court it wins, though on two or three occasions in the past five years the court has changed a fine to a warning if the information provided was inadequate.

**Administrative measures**

Inspectors can issue warnings and impose fines directly for infringements. The law covers both natural persons (who are subject to lower fines) and legal entities and allows the payment of fines to be reduced by half for infringements when paid within 15 days. If fines are contested, the matter is taken to court. Legal entities pay fines for non-compliance with environmental legislation to the State budget, whereas natural persons pay them to the local public administrations. NGOs sometimes question the level of sanctions and two complained in April 2019 to the EC that fines against coal-fired power plant operators, which can be as low as 30,000 lei and have been rarely applied, are not the effective, proportionate and dissuasive sanctions required by the Industrial Emissions Directive.

NEPA and its county branches issue warning notices for non-compliance with permit requirements, and have the authority to suspend or withdraw permits, following requests from NEG. NEG can itself apply the main administrative sanctions, being warnings and fines, and complementary sanctions: suspension or closure of an activity, proposing suspension of an activity, bringing the land to its initial state and the imposition of measures to remedy deficiencies found.

The approach of NEG is that initial sanctions should be light, but the operator must comply with measures. If not, the operator can be fined again for failure to apply measures and NEG can even suspend the activity. It is a criminal offence to continue a suspended activity. NEG can close activities when operators do not implement measures, have the necessary licences and permits or complete construction. Nonetheless, NEG prefers to find a solution to a non-compliance and does not approach lightly the suspension or cancellation of a permit. With increasing numbers of lawyers specialising in environmental law, companies are well equipped to protect their interests.

The number of inspections carried out by NEG has dropped steadily since the period 2010–2011, when it averaged about 62,600 controls per year, to 39,841 in 2018, with a similar figure expected in 2019 (table 2.10). Fines in the period 2012–2018 have averaged and been close to 42.9 million lei a year, after a peak of 87.5 million lei in 2011. The frequency of imposing fines has dropped from 13.7 per cent in 2004–2006, to 9.2 per cent in 2010–2011, and to 5.6 per cent in 2012–2018. The frequency of issuing a warning has also dropped, but the frequency with which inspected operations were suspended more than doubled from 0.19 per cent in 2010–2011 to 0.43 per cent in 2012–2018. However, the overall number of sanctions, including fines and warning as well as more severe actions, dropped from 14.4 per cent in 2010 to 9.4 per cent on average in the period 2012–2018, though there was an uptick in the first nine months of 2019 to a rate of 13.1 per cent.

Major sources of water pollution are from agglomerations without wastewater treatment or adequate collections systems, and from abandoned mines. Many larger agglomerations do not comply with EU legislation on urban wastewater treatment, but the greater challenge is the 1,600 agglomerations of 2,000–10,000 population for which the European Bank for Reconstruction and Development has estimated €23 billion is needed for compliant wastewater treatment and drinking water supplies. Romanian Waters therefore faces difficulties in applying non-compliance measures to these communities and lacks the power to oblige local authorities, utilities or industries to treat wastewaters. The national legislation sets sanctions, such as a punitive tariff of 10 times normal rate for exceeding licensed abstractions. Generally, fines are paid and are high enough to be effective. Romanian Waters can suspend water management licences for local impact pollution, but it gives priority to compliance and notes the economic importance of water users.
### Table 2.10. Sanctions by NEG, 2010–2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Controls/Inspections</th>
<th>Fines (number)</th>
<th>Fines (lei)</th>
<th>Warning notices</th>
<th>Suspensions of activity or operation</th>
<th>Permanent closures of installation</th>
<th>Proposals to suspend authorization</th>
<th>Criminal cases drawn up</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>59,614</td>
<td>5,592</td>
<td>77,300,000</td>
<td>2,810</td>
<td>118</td>
<td>8</td>
<td>9</td>
<td>42</td>
</tr>
<tr>
<td>2011</td>
<td>65,655</td>
<td>5,931</td>
<td>87,500,000</td>
<td>2,404</td>
<td>125</td>
<td>3</td>
<td>18</td>
<td>No data</td>
</tr>
<tr>
<td>2012</td>
<td>64,726</td>
<td>2,693</td>
<td>38,354,840</td>
<td>1,488</td>
<td>122</td>
<td>1</td>
<td>18</td>
<td>53</td>
</tr>
<tr>
<td>2013</td>
<td>56,047</td>
<td>3,477</td>
<td>52,685,285</td>
<td>1,772</td>
<td>188</td>
<td>0</td>
<td>37</td>
<td>36</td>
</tr>
<tr>
<td>2014</td>
<td>45,070</td>
<td>2,321</td>
<td>38,521,940</td>
<td>1,215</td>
<td>183</td>
<td>0</td>
<td>44</td>
<td>48</td>
</tr>
<tr>
<td>2015</td>
<td>43,521</td>
<td>2,450</td>
<td>44,980,740</td>
<td>1,325</td>
<td>258</td>
<td>1</td>
<td>36</td>
<td>55</td>
</tr>
<tr>
<td>2016</td>
<td>41,721</td>
<td>2,795</td>
<td>47,444,220</td>
<td>1,644</td>
<td>236</td>
<td>0</td>
<td>43</td>
<td>103</td>
</tr>
<tr>
<td>2017</td>
<td>40,691</td>
<td>1,969</td>
<td>39,183,130</td>
<td>1,286</td>
<td>237</td>
<td>0</td>
<td>33</td>
<td>54</td>
</tr>
<tr>
<td>2018</td>
<td>39,841</td>
<td>2,606</td>
<td>39,121,420</td>
<td>1,570</td>
<td>140</td>
<td>1</td>
<td>53</td>
<td>25</td>
</tr>
<tr>
<td>2019*</td>
<td>29,383</td>
<td>2,535</td>
<td>40,368,200</td>
<td>1,149</td>
<td>117</td>
<td>No data</td>
<td>26</td>
<td>30</td>
</tr>
</tbody>
</table>

*Source: NEG annual activity reports, 2019.*

*Note: * to 30 September 2019

In forestry, the Forest Guards can suspend operations for many different violations of the forest management plan, including for having inadequate staffing or equipment, for example. The Guards observed that an increase in fine levels a decade earlier led to a decrease in collection rates. They impose minimal fines for accidental infringements but otherwise apply dissuasive fines. The EU Timber Regulation has entered into force since the previous EPR of Romania. The Regulation requires that penalties for infringement of the Regulation be effective, proportionate and dissuasive, including “fines proportionate to the environmental damage, the value of the timber or timber products concerned and the tax losses and economic detriment resulting from the infringement”. Illegal logging varies greatly across the country, with smaller areas affected around Bucharest, for example, and much more damaging activities in mountainous areas. Public concerns about perceived high levels of illegal logging are not matched by enforcement actions (box 2.1). In addition, illegal logging may be being encouraged by excess domestic wood-processing capacity.

### Box 2.1: Illegal logging and the loss of old-growth forest

NGOs allege that ancient forests are being logged illegally and the resulting timber is mixed in with timber logged legally in production forests for subsequent export. NGOs allege that timber is logged illegally without permits but also that it is logged with permits that should not have been issued as logging takes place in national parks and other protected areas. Timber from other countries is added to the mix. Much of the legally logged wood is transported directly from the production forest to the processing facilities, while some of the legally logged timber is mixed with illegally logged wood in log depots across the country and then forwarded to the processing sites; the latter portion may represent between 40 and 45 per cent of the total volume.

Up to two thirds of the old-growth forests in the Romanian sector of the Carpathian Mountains may have been lost in the past decade.

The NGO report recommends to the Government to:

- Continue prosecution of the company at the centre of the allegations; expand to other bad actors, both foreign and domestic;
- Expand the Forest Inspector website to provide more key data to the public;
- Significantly strengthen law enforcement against illegal logging and corruption;
- Stop commercial logging in national parks;
- Inspect and investigate imports from non-EU countries into Romania for compliance with EU Timber Regulation due diligence and traceability requirements.

*Source: Environmental Investigation Agency, 2018.*

The level of sanctions for fisheries infringements – fines and suspensions – are considered by the National Agency for Fishing and Aquaculture to be dissuasive, having been transposed from EU law.

In case of non-compliance with legal norms for hygiene and public health, generally a fine or warning is issued. If there is a risk for public health, or if any deficiencies are not corrected by a deadline, the authorities can impose a suspension of the activity. Fines for medical facilities were increased in 2019. The authorities issue many...
Part I: Environmental governance and financing

warnings but take other measures too (table 2.11). The number of sanctions has declined in line with the number of inspections. The health authorities have increasingly decided to apply the sanction of closing units in the period since 2012.

<table>
<thead>
<tr>
<th>Sanctions</th>
<th>2013</th>
<th>2018</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warnings</td>
<td>10,735</td>
<td>6,851</td>
<td>-36%</td>
</tr>
<tr>
<td>Fines (number)</td>
<td>5,537</td>
<td>4,920</td>
<td>-11%</td>
</tr>
<tr>
<td>Fines (million lei)</td>
<td>4.0</td>
<td>7.7</td>
<td>90%</td>
</tr>
<tr>
<td>Suspensions of activity</td>
<td>198</td>
<td>149</td>
<td>-25%</td>
</tr>
<tr>
<td>Withdrawal of sanitary operating permits</td>
<td>55</td>
<td>50</td>
<td>-6%</td>
</tr>
<tr>
<td>Decisions to close units</td>
<td>1</td>
<td>15</td>
<td>1400%</td>
</tr>
<tr>
<td>Total</td>
<td>16,524</td>
<td>11,985</td>
<td>-27%</td>
</tr>
</tbody>
</table>

Source: Ministry of Health annual activity reports

Criminal measures

The environmental authorities prepare criminal cases and forward them to the prosecutor, with whom they then cooperate. Generally, prosecutors are not practised in environmental law. The exception is in Constanta, where a prosecutor is experienced in dealing with customs cases on waste transfer and the prosecutor’s office sees many fisheries-related cases. For inland waters, criminal files on fisheries are handled well by the police.

For forestry, the Forest Guards seek a principal fine and, as appropriate a compensation fine, which serve as a deterrent. Forestry cases are successfully prosecuted in over 80 per cent of the time, though the Guards would prefer that prosecutors seek more severe levels of sanctions. Sanctions vary from court to court and even from case to case for different operators for the same act in the same court, which is harder to explain. Sometimes sanctions are not applied because of attenuating circumstances.

NEG saw an increase in the small number of cases that resulted from inspections: criminal cases were drawn up only 0.07 per cent of the time in 2010 but were prepared 0.12 per cent of the time in 2012–2018 (table 2.10). The Brasov County NEG, for example, enjoys a good relationship with prosecutors, always wins in court and considers sanctions to be adequate.

Since August 2018, a virtual group of Romanian prosecutors has been sharing statements and relevant case law on environmental crime, specifically waste-related cases. Romania has been participating in Europol work on environmental crime since 2018 and is an active member of IMPEL.

Occasionally, events are held to raise awareness of inspection and control activities in the field of environmental crime, involving both environmental and judicial authorities. For example, an event was organized under the EU Working Party on General Matters including Evaluations on practical implementation and operation of European policies on preventing and combating environmental crime (November 2018). The event attracted representatives of the Ministry of Environment, Waters and Forests, the Public Ministry – the Prosecutor’s Office attached to the High Court of Cassation and Justice, the Ministry of Internal Affairs, the Ministry of Health, NEG, the Romanian Police, the General Inspectorate of Border Police and the General Directorate of Customs. This event was part of an evaluation that led to a report to the EU Council that set out several useful recommendations (box 2.2).

Box 2.2: Selected recommendations to Romania in the 2019 report on Romania on the practical implementation and operation of European policies on preventing and combating environmental crime

- Consider prioritising the fight against environmental crime (e.g. by establishing a national strategy defining the main goals and the roles of the respective authorities involved in the fight against environmental crime);
- Develop methods to collect statistics referring to waste crime in comprehensive way in order to show the development/trends in waste crime in Romania;
- Implement a waste hierarchy, prioritising waste prevention and recycling to reduce opportunities to dispose of waste illegally;
- Consider introducing landfill taxes to discourage the illegal import of household waste;
- Is encouraged to set up a specialised unit within the police and designate prosecutors specialised in fighting waste crime at regional and/or national level;
2.5 Environmental liability, insurance and compensation

The law implementing the Directive 2004/35/CE on environmental liability with regard to the prevention and remedying of environmental damage was passed back in 2008 and the legal regime at the EU level has evolved little since then. The Directive – and the national legislation – covers damage to biodiversity (protected species and natural habitats), water and land. An amendment in 2013 extended the scope to include the marine environment. The polluter pays principle is embedded in Romania’s environmental protection frameworks.

Numerous studies have shown the difficulty of implementing many elements of the Directive in a harmonized manner and in particular the financial security instruments. The EC found in 2019 that 26 of the 28 EU member States, including Romania, should improve the application of the Directive in one or more of the following areas: financial security, guidance, and collection and publication of information on environmental damage. The last of these areas has been addressed by the latest amendment to the Directive.

Romania, as other countries, has struggled to establish financial security instruments. The Ministry of Environment, Waters and Forests has discussed insurance policies with insurance companies and invited proposals from banks and insurance brokers, but without a positive response because of the high risk involved. The Ministry is now considering other financial instruments besides insurance and studies are being undertaken at the EU level.

One exception is in relation to mining. The Ministry of Environment, Waters and Forests, the Ministry of Economy and the National Agency for Mineral Resources issued a joint order in 2013 on compulsory financial guarantees for mining operators to cover rehabilitation works after exploration or production, with portions retained for post-development monitoring and for works in case of accident. The guarantee is deposited with the Ministry of Economy.

If an operator has an environmental permit, integrated environmental permit or environmental agreement, it is obliged to pay for preventive and remedial measures under the polluter pays principle. Any remediation payments imposed by the courts are made directly by the polluter to the company undertaking the remediation works. NEPA gathers statistics every six months on cases of environmental damage, though these are rare.

2.6 Voluntary compliance promotion instruments

Environmental managements systems

The SDS 2030 envisages the promotion of instruments that lead to improved environmental performances through information and awareness-raising campaigns on the advantages of obtaining EU Ecolabels for products and services, and the registration of public and private organizations in the EU Eco-Management and Audit Scheme (EMAS). NEPA services an EMAS Committee and the Ministry of Environment, Waters and Forests, wanting organizations to be open-minded about EMAS, does not charge the usual fee for registration. NEPA provides technical advice on EMAS to small organizations for free. The Ministry has some funds from the Environment Fund Administration to promote EMAS until 2021. Past efforts have included attempts to engage members of the
Chamber of Commerce and Industry and a competitiveness guide by the Ministry of Economy that spoke of EMAS and ecolabelling.

Compliance with EMAS or ISO 14001 benefits companies indirectly as well as directly. NEG takes into account such certification when classifying economic activities, possibly leading to less frequent inspection.

EMAS saw its first registration in Romania in 2007, even before the EU Regulation entered into force in the country in 2010. However, the growth in numbers has been slow. The EC EMAS register lists only 4 registrations in Romania out of a total of 3,653, whereas the national register shows that there has been a steady growth in interest in EMAS since 2014, even if the numbers are very small. Only nine registrations were valid in 2019 (figure 2.11).

**Figure 2.11: Valid EMAS registrations, 2011–2019, number**


There is a clear preference among organizations for the ISO 14001 standard for environmental management systems (EMS), and for ecolabelling. With EMAS, an accredited verifier must check the environmental statement and EMS and the scheme demands more of the organization in terms of transparency and setting targets and objectives, for example. RENAR has accredited two companies for EMAS certification and 19 for ISO 14001. Despite the relative popularity of ISO 14001, numbers of certificates in Romania have recently seen a steep decline, with 47 per cent fewer in 2018 than 2014 (figure 2.12), though this decline is in part explained by a change in accounting.

**Figure 2.12: ISO 14001 certificates, 1999–2018, number**


Labelling
The situation with regard to ecolabelling according to the EU regulations is rather similar to that for EMAS with a slow take up, despite promotion of ecolabelling by the Ministry of Environment, Waters and Forests according to its ecolabelling strategy and, as noted above, in the SDS 2030. The Ministry plans a survey in 2020 to promote EMAS and ecolabelling, funded by the Environment Fund.

A company wishing to be awarded an EU Ecolabel for its products must first apply for a licence. The Ministry is responsible for granting EU Ecolabel licences, whereas the NEPA provides a technical secretariat for a commission, which undertakes a site visit and inspection in response to an application. However, the Ministry has only one staff member working on this topic, and NEPA has two. There have not been any legislative developments in this field since 2012.

As of September 2019, Romania had 22 labelled products (goods and services) out of 77,358 in total in the scheme, produced by 17 ecolabel-licenced companies out of 1,623 in total in the scheme (rising to 18 in October 2019). The NEPA website provides only a list of products in 2014. The EC Environmental Implementation Review 2019 of Romania states that, as of September 2018, the country had 24 products and 19 licences registered in the Ecolabel scheme out of 71,707 products and 2,167 licences in the scheme in all countries. Romania has a poor take-up and has even seen a slight recent decline. Based on International Monetary Fund 2019 estimates of nominal GDP, Romania represents 1.3 per cent of the EU economy but it accounts for 1.0 per cent of ecolabel licenced companies and only 0.02 per cent of ecolabelled products.

Corporate social responsibility

No information was provided on corporate social responsibility, which is not an important concept in the country.

Voluntary environmental reporting by companies

SDG 12 – Ensure sustainable consumption and production patterns – includes a target 12.6 (encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle). The indicator for this target (12.6.1) is the number of companies publishing sustainability reports.

The target has two elements: sustainable practices and sustainability reporting. The SDS 2030 encourages companies to act in line with the target and foresees the introduction of “a sustainability code for the complex reporting of the attitudes of companies vis-à-vis the application of the principles of sustainable development”. The Chamber of Commerce and Industry confirmed that mainly the national branches of transnational companies carried out voluntary reporting.

In addition, since 2012, the EU brought in legislation regarding the disclosure of non-financial information by large companies, having over 500 employees. The legislation requires production annually of a “a non-financial statement containing information to the extent necessary for an understanding of the undertaking’s development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters”. The national implementation requires such reporting from 2017. However, the methodology adopted for measuring indicator 12.6.1 extends sustainability reporting to companies of over 250 employees.

A first global report on indicator 12.6.1 is expected in 2020. Meanwhile, the Global Reporting Initiative’s Sustainability Disclosure Database provides the largest global collection of sustainability reports, though only reports to 2017 are included in the database’s search function. The database indicates whether reports comply with certain standards set by the Initiative. It therefore provides a useful basis, though the results are not encouraging (figure 2.13). Romania’s Voluntary National Review 2018 states that 24 companies had submitted Non-Financial Reports in accordance with the Directive. This compares with the 1,789 enterprises with 250 or more employees in Romania, according to the National Institute of Statistics. Other instruments are supportive of sustainability reporting, including environmental managements systems and especially EMAS.

In a presentation to the ECE Committee on Environmental Policy in November 2017 the Government described a framework for target 12.6. It identified the responsible institutions as being the Ministries of Economy, of Environment and of Water and Forest (at that time separate), of Transport, and of Agriculture and Rural
Part I: Environmental governance and financing

Development. EU policies were expected to be supportive, including those for EMAS, ecolabelling and the Environmental Technologies Action Plan. At the national level, the National Programme for Rural Development 2014–2020 did not provide direct support. The indicator 12.6.1 was to be provided by the National Institute for Statistics and the Ministry of Regional Development, Public Administration and European Funds.

Figure 2.13: Sustainability reports issued, 2012–2019, number

![Graph showing sustainability reports issued, 2012–2019, number](image)

*Source: Global Reporting Initiative’s Sustainability Disclosure Database, 2020.*

*Note: Incomplete data in 2018–2019*

However, the National Institute of Statistics does not include target 12.6 in its Database of Sustainable Development Indicators in Romania. The EU-wide indicators for SDG 12 focus on consumption, productivity and waste and resource volumes, rather than indirect measures such as global indicator 12.6.1.

### 2.7 Legal, policy and institutional framework

#### Legal framework

Since 2012, the country’s legislation has continued to develop rapidly and become more closely aligned with that of the EU. Much major legislation was passed and very many lesser revisions were introduced to fill gaps, clarify provisions and expand the scope. Many stakeholders – both governmental and non-governmental – complain about rushed changes in legislation, which sometimes leads to poor drafting, increased legal complexity and resulting greater workload. They also observe the lack of opportunity to engage in the drafting of legislation, especially when GEOs are used to enact legislation without consultation.

Key legislative changes include: the 2013 Law on Industrial Emissions, which revised the integrated environmental permit and transposed the Industrial Emissions Directive, and which was itself revised to address deficiencies in the transposition; the 2015 Law on Standardization; the 2016 Law on the Control of Major Accident Hazards involving Dangerous Substances, transposing the Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances (Seveso III Directive); the 2018 Law on the Evaluation of the Impact of Certain Public and Private Projects on the Environment, or EIA; the 2019 Law on the Management of Potentially Contaminated and Contaminated Sites; and the 2019 Law that amended earlier legislation on construction permits, and which reduces the scope of construction activities to be notified to LEPA.

Two contentious laws were enacted: the 2016 Law on Measures Necessary for the Implementation of Natural Gas Projects of National Importance, which provided exemptions from several other laws for such projects; and the 2019 Law for the Amendment of and Addition to Article 16 of GEO on Environmental Protection, which brought in the annual visa for environmental permits.

The legal framework for environmental permits remains largely unchanged since 2012, except for the introduction of the annual visa. The procedure for issuing the environmental authorization has been modified by two new MOs, to follow-up on the abolition of the regional level of NEPA and to include forestry and logging as an activity subject to an environmental permit, instead of logging only. Additional sectoral laws apply; for example, both the
Environmental Protection Law and the Water Law prohibit the introduction of polluting matter into waters, except when permitted by law.

EIA legislation was revised in 2018 in line with EU directives to bring about an integrated approach. EIA now includes matters dealt with under EU directives such as the Habitats Directive, the Water Framework and Seveso Directives. Some methodological guidelines have been developed (covering the capture of groundwater and water supply systems, wastewater treatment plants and sewage networks, flood prevention and protection works, integrated waste management systems, the construction of highways and roads, railway construction projects and flue gas desulphurization for large combustion plants) and seven more (general guides on the EIA procedure and transboundary EIA and five sectoral ones on municipal waste incineration, quarries and surface mining, installations for the intensive rearing of farm animals, hydroelectric power plants and afforestation or deforestation), prepared under an EU-funded project, are anticipated at the end of 2019.

Completely new legislation on standardization was introduced in 2015. Noise regulations have been changed by orders by the Minister of Health, as well as an EU standard. Construction material standards have tracked EU changes. Numerous EIA guidelines have been approved by MO in 2016, addressing the main economic activities subject to EIA, with a draft order having been prepared in December 2019 to approve further guidelines.

At the EU level, the General Data Protection Regulation was adopted in 2016, impacting the publication of information on economic actors and the work of NGOs. The 2014 amended Directive on Non-financial and Diversity Information provides a strengthened basis for sustainability reporting. The EC continues to issue decisions establishing BAT conclusions for different economic activities.

Other legislation brought about institutional changes, such as: the 2012 GD on the Reorganization and Functioning of NEPA and of the Public Institutions Subordinated to it, which abolished the regional level from the structure of NEPA; and the 2015 GEO on the Establishment of the Forest Guards, in response to a public outcry about illegal logging. The following year, a GEO recognized that the extent of illegal logging represented a national security threat. NANPA was established in 2016.

Legislation in other areas has been revised, rather than being rewritten. Legislation for ozone-depleting substances has not changed. Emissions and ambient quality standards were altered by the integrated approach to industrial emissions and revisions to EU directives, for example, by the Priority Substances Directive and by changes to the Drinking Water Directive. Food and toy standards have continued to evolve. The main modern development of the waste legislation occurred prior to 2012, though a series of amendments followed.

Policy framework

The SDS 2030 supports the country’s implementation of the 2030 Agenda for Sustainable Development, while providing a practical framework for action on matters, such as EMAS and ecolabelling.

Annual action plans or programmes, including on inspection, are used to define what the various bodies are to achieve and to measure their performance, as described in the subsequent annual activity reports. Where these reports provide statistics rather than long lists of activities, they can serve the purpose of performance measurement.

In forestry, forest management plans provide a decade-long structure upon which short-term timber harvesting plans and, ultimately, logging permits are based. In fisheries, the EU Common Fisheries Policy provides the main framework, including for achieving SDG target 14.4. Nationally, a Multiannual National Strategic Plan for Aquaculture and an Operational Programme for Fisheries and Maritime Affairs 2014–2020 have been adopted. For freshwaters, the Updated National Management Plan 2016–2021, which responds to the Water Framework Directive, focuses on that part of the Danube River Basin in Romania and provides a framework for SDG target 14.4 in the Danube River catchment.

Finally, authorities referred to the importance of the National Anticorruption Strategy 2016–2020, given the pressures on inspectors in terms of low pay, high workload, limited budget and interactions with multiple economic actors. The strategy is implemented, for example, by the 2015 and 2016 declarations by the Cabinet of the Ministry of the Environment on adherence to the fundamental values, principles, objectives and monitoring
mechanism of the strategy, which commits the Ministry and its subordinated bodies to a number of actions to fight corruption.

Institutional framework

Ministry in charge of the environment

The ministry(ies) in charge of the environment, water and forests is the key institution, acting through its subsidiary bodies, notably: NEPA, NEG and the Forest Guards, bodies under its authority, notably: Romanian Waters and Romsilva, and bodies under its coordination: the Environment Fund Administration.

The regional level of NEPA was removed in 2012 and the associated staff reassigned at the county level. 408 staff work in NEPA permitting departments countrywide, whereas 560 are needed, representing a shortfall of 27 per cent. In the Brașov LEPA in 2019, of the 36 staff (38 foreseen), 11 staff handled 250–300 environmental permits, 15 new integrated environmental permits and revisions and renewals of 54 valid integrated environmental permits, besides EIAs and strategic environmental assessments; of the 11 staff, the 4 more senior staff handle EIAs of IED installations. Besides the general lack of staff, there is a concern that many of the experienced staff will soon retire and young recruits need a lot of training.

A local authority is obliged to notify LEPA about a planned development, for example when an application is made for a building permit, in case it might have environmental implications. The second EPR of Romania recommended that the Ministry of Environment and Forests (at that time) consider diminishing the regulatory load on NEPA by delegating some of its current tasks, such as certain category screening of EIA, to local authorities (Recommendation 2.1(b)); this recommendation has not been implemented directly.

However, two legislative changes are expected to affect the workload of LEPA staff. On the one hand, the 2019 Law that revises the 1991 Law on construction permits removes five types of construction from the notification process, such as individual houses, and this may reduce slightly the workload; the 1991 Law had very few exemptions, such as repairs to fencing or roofs, if the form and materials remain unchanged, or interior decoration. On the other hand, it is probable that the introduction of the annual visa on permits will lead to an increase in workload, though on 9 December 2019 the visa procedure had yet to be communicated to permitting staff. It is not yet defined whether the Technical Review Committee should meet for the annual review of permits and licences; if it does, this will imply an increase in workload for permitting authorities, whereas, if it does not, a valuable check on the permitting process will be lost.

Various actors may have jurisdiction over different geographical or administrative areas for EIA procedures. For example, a project subject to the Water Framework Directive would be examined by the relevant basin administration under Romanian Waters, or under Romanian Waters at the national level if it crosses more than one basin; the EIA of a smaller project might only require checking by the county level water administration. Similarly, the project would be considered by a LEPA if wholly within one county or by NEPA at the national level if not. The Ministry of Environment, Waters and Forests handles EIAs of nuclear power plants, mining projects in excess of 25 hectares and construction on forest land affecting between 1 and 10 hectares, for example.

NEG, like NEPA, has a central office and 43 commissariats in Romania’s 41 counties, Bucharest municipality and for the Danube Delta Biosphere Reserve. NEG has 559 commissioners (inspectors) posted at the county level, with for example 14 in Bucharest, 14 in Ilfov County and, in Brașov County, the office has 13 staff of whom 12 are inspectors. The NEG Central Commissariat has about 50 inspectors, providing oversight of the counties. Nationally there is a shortfall of about 16 per cent in the expected full complement of 662 commissioners. The salary is not attractive to experienced professionals and, though recent graduates are interested, they lack experience.

The main competent authorities with responsibility for different aspects of environmental damage are NEPA and NEG and their county branches. The county commissariats of NEG are responsible for the detection of environmental damage, the imminent threat of such damage and identification of the liable operator. LEPAs are then responsible, in consultation with other authorities, for assessing the significance of the damage and establishing and taking preventive and remedial measures. LEPA must itself take remedial measures if the operator cannot be identified, or is not obliged to support the costs, or has not taken the necessary measures.
LEPA can then reclaim the costs from the operator. The Recommendation 2.2 made in the second EPR of Romania asking the then Ministry of Environment and Forests to improve information management and disclosure practices between NEPA and NEG is partially implemented as annual activity reports are not available on respective websites.

Romanian Waters had 128–130 inspectors in 2018, working on permitting, licensing and EIA. It benefits from retaining the fees it collects to cover its operations. It administers many types of water permits and licenses, including water management permits to construct water infrastructure, surface water and groundwater abstraction licences and wastewater discharge licences. Romanian Waters and the National Agency for Mineral Resources have joint responsibility for permitting exploitation of sand and gravel from the bed of minor rivers, while the latter has sole responsibility for administering mineral waters. The Romanian Commission for Safety of Dams and other Hydraulic Works handles the permitting and inspection of dams, including operating permits.

The National Agency for Mineral Resources is responsible for issuing exploration and production licences, both of which provide exclusive rights and are based on a bid system in response to a public call for tenders. Oil and gas permits and licences are handled by the central office of the National Agency.

The National Agency for Fishing and Aquaculture handles permits and licences for marine and freshwater fishing and for aquaculture. It has 129 posts though only about 100 staff were on board in December 2019, representing a shortfall of about 22 per cent. Forty staff are located at headquarters, with 5 regional offices handling marine and inland fisheries and aquaculture. Most fisheries inspectors are 55–60 years old and soon to retire, with the few younger ones being in Bucharest.

The Forest Guards were established in 2015. They too note a difficulty in recruiting staff and a lack of forest engineers. It has 460 staff on 602 positions, representing is a shortfall of about 24 per cent. Eight staff carry out inspections for the Bucharest region. The situation in forestry control and inspection was more difficult prior to 2015, when the Forest Guards were created, and higher salaries were introduced for those working in this area. Before that, the authorities could not compete with forest enterprises, whereas now the Forest Guards enjoy comparable salaries. Romsilva, in the case of the State forest estate, or one of about 2,000 forest enterprises are themselves responsible for issuing logging permits.

Other key actors include the Ministry of Internal Affairs, including through its General Inspectorate for Emergency Situations regarding industrial safety, as well as – regarding many aspects of environmental crime and justice – the national, transport and military police forces and the Border Police and its Coast Guard. The General Directorate of Customs, within the Ministry of Public Finance, also plays a role in enforcement. The Ministry of Health is a major actor in inspection and enforcement through its State Sanitary Inspectorate and the public health departments of local authorities.

Among other tasks the State Inspectorate for Constructions (Ministry of Public Works, Development and Administration) verifies and ensures compliance with the legal requirements for the quality of construction materials, except with respect to fire safety. The National Authority for Consumer Protection, under the Government, is responsible for overseeing the market in consumer products, including toys and foods, and enforces legal provisions on consumer protection related to the safety of those products. That authority’s activities are complemented by the work of the independent National Authority for Veterinary Health and Food Safety, which operates as a regulator in the field of veterinary and food safety.

Various bodies are responsible for the issuance of permits and licences and agreement on activities subject to EIA. An urbanization project will require, for example, endorsement by water and health authorities, utilities and road authorities, among others. An important part of permitting, licencing and EIA is therefore the convening of a Technical Review Committee, which brings together representatives of all institutions involved in the decision-making on a permit or environmental agreement so that a consensus decision can be taken. At the central or
national level, ministries and headquarters of agencies participate. Elsewhere, the responsible prefect orders the constitution of the Technical Review Committee at the level of each county, Bucharest municipality and DDBRA.

The presence of representatives of the relevant authorities in the Technical Review Committee is compulsory at the request of the competent public authority for environmental protection, and this obligation is respected. The relevant authorities are the public administration, including the land-use planning department, health authorities, water management authorities, cultural heritage authorities, inspectorates of emergency situations, public authorities for inspection and control regarding environment protection, forest authorities, agriculture departments and other authorities, depending on the specific nature of the project. Health authorities, for example, confirm joining the Technical Review Committee meetings, expressing their points of view and generally having those views taken into account and recorded in the minutes of the meeting.

Besides Technical Review Committees, county prefects organize river basin committees that include the local authority, Romanian Waters, industry and NGOs.

ASRO is separate from Government and largely dependent financially on individual ministries financing translations of EU and International Standards Organization (ISO) standards into Romanian, among other tasks. For example, in 2019, the Ministry of Environment, Waters and Forests funded translation into Romanian of seven water, seven noise and three air standards that were referred to in national legislation. ASRO also attracts funding from the EC. ASRO involves various parts of Government in standards setting committees. For example, the National Authority for Consumer Protection is a member of the ASRO Consumer Committee and participates in its meetings. Other agencies, such as the State Inspectorate for Construction, are invited to join such meetings but are often unable to do so because of a lack of staff.

The Ministry of Health notes in its 2018 activity report that the State Sanitary Inspection has great difficulty in carrying out its activities because of a large decrease in the number of personnel, including as a result of retirements. The Ministry’s own norms specify that there should be four inspectors per 100,000 inhabitants, whereas, for example, the Public Health Department of Bucharest municipality has about half of that rate. The activity report also notes inadequate funds for staff transport and a lack of accredited laboratories in some areas of competence.

Finally, the National Commission for Nuclear Activities Control issues permits in relation to the use of radioactive sources. It has 2 staff issuing permits, 11 issuing licences and 17 performing inspections and controls. It too notes the difficulty of recruiting and retaining suitable staff.

### 2.8 Assessment, conclusions and recommendations

#### Assessment

Since the carrying out of the second EPR of Romania in 2012, changes have been introduced to permitting and licensing to align the national system with EU legislation. The competent authorities have been reorganized, notably with the removal of the regional level in NEPA in 2012. In 2013, new legislation was introduced for integrated environmental permits. Nonetheless, many of the more technical aspects of permitting and licensing persist from the early 2000s.

Integrated environmental permitting has been successfully revised, though transposition of the Directive was rushed. The regulated community has evolved greatly since 2012 but permitting of some major polluters continues to pose a challenge, notably in terms of urban wastewater and large coal combustion plants.

In 2019 a requirement was introduced for an operator to apply for an annual visa on a permit, to be granted by the authority that issued the permit, which de facto reduces the validity to one year, renewable indefinitely. A similar change was attempted in 2018, but successfully challenged in the Constitutional Court. Implementing procedures for the annual visa had not been issued by December 2019 and it is unclear whether the broader scrutiny during permit renewal, previously provided by the Technical Review Committee and the public, will be maintained.
Chapter 2: Regulatory and compliance assurance mechanisms

The EC Environmental Implementation Review 2019 of Romania notes that implementation remains the main challenge, Romania being among the EU Members States with the highest number of environmental infringements, including for the authorization of projects without the necessary assessments and permits. However, all six infringement cases brought by the EC regarding impact assessment have since been closed.

EIA legislation has also been successfully revised to bring about a more integrated approach and the necessary guidelines continue to be issued. The introduction since 2012 of legislation that waives environmental protection laws for projects of national importance is of concern and may set a worrying precedent for regional infrastructure and other large projects. EIA practice, and permitting, in relation to mining and forestry projects is of greatest concern to civil society.

NGOs report that public participation in permitting and EIA is constrained, as is public access to relevant information in relation to permitting and inspection, EIA and forest management planning. This is partly due to weak IT infrastructure. The Forest Inspector is an important initiative. Poor zoning by local authorities exacerbates conflicts between residential and industrial land uses, for example when residential areas are designated close to existing or already-planned industrial or polluting activities and without respecting minimum distances between such zones. This inevitably leads to objections from residents to permitting of industrial activities and to complaints about noise, smell and waste. Appeals by the public have proven to be a vital check on maladministration.

Emission, ambient quality and product standards are being strengthened by the continuing alignment with EU and ISO standards. The move away from national to international standards needs to be accompanied by the translation and availability of standards in Romanian.

The frequency of inspection has seen a decline since 2012, but there is evidence of more severe sanctions being sought and applied in several areas. Numerous authorities cooperate and coordinate their compliance activities to increase effectiveness. The management of construction and demolition waste is weak, though action is being taken to fill legal gaps. A gap also exists in relation to the regulation of certain foodstuffs, notably supplements.

The availability of legal expertise across the environmental authorities is uneven, as is the capacity of prosecutors and courts to address cases brought by the environmental authorities. Sanctions risk being blocked pending appeal, which allows damaging behaviour to continue. Sanctions, particularly fines imposed on legal entities, may also be too low to be dissuasive in some sectors. Illegal logging is a concern of the public and the true situation is disputed.

The environmental liability regime remains at an early stage of development. EMAS has failed to attract companies while ISO 14001 proved to be of interest but has recently seen a decline. Ecolabelling too has failed to take off. The picture regarding sustainability reporting is unclear, with transnational corporations showing most interest.

There has been a rapid and deep development in key legislation since 2012, particularly to strengthen alignment with and transpose directives. Drafting would have benefited from a more inclusive process. The policy, programming and planning framework is generally adequate.

The second EPR of Romania recommended the then Ministry of Environment and Forests to review the regulatory acts that define activities subject to SEA in order to decrease the number of cases subject to it and streamline assessment procedures (Recommendation 2.1.a). By repealing the act which listed plans and programmes subject to SEA, Romania implemented the recommendation. The second part of this recommendation (Recommendation 2.1.b) on diminishing the regulatory load on NEPA is partially implemented by the GD No. 1000/2012. However, it is probable that the introduction of the annual visa on permits will lead to an increase in workload to permitting staff. The Recommendation 2.2 is partially implemented as annual activity reports are not always available at the NEPA and NEG websites. According to the law, inspection reports are to be published, though personal data about operators are blanked out in respect of the EU General Data Protection Regulation. The MO No. 256/2014 revised the procedures for carrying out environmental inspections, resulting in a decrease of the frequency of inspection for each class of installation. This satisfies in part the Recommendation 2.3. The risk methodology was also revised. The Government has not implemented the Recommendation 2.4. Environmental cases are tried in normal courts and there are no specialized judges and experts. Therefore, this recommendation remains valid.
Romania is on the track towards the achievement of SDGs target 12.6 by the adoption of the SDS 2030. On the one hand, the Strategy introduces sustainable practices, encourages companies to act in line with the target and provides for companies’ sustainability reporting by the introduction of “a sustainability code”. On the other hand, the national legislation requires the disclosure of non-financial information by large companies (companies of over 250 employees) since 2017, but only 24 out of a total of 1,789 enterprises of this category had submitted Non-Financial Reports according to Romania’s Voluntary National Review 2018. Moreover, the National Institute of Statistics does not include target 12.6 in its Database of Sustainable Development Indicators in Romania.

The changes in institutional arrangements have been beneficial, with the removal of the regional level in NEPA not having caused difficulties and the establishment of the Forest Guards having been an important addition. However, the Forest Guards need strengthening to respond to public concern about illegal logging and wildlife crimes. NEG is a key, well-organized actor. Technical Review Committees provide a valuable mechanism for coordination.

Many authorities see a shortfall of about a fifth in their current staffing relative to their post structure. They also face difficulties with the retirement of experienced staff and recruiting and retaining adequately knowledgeable new staff. The future workload of LEPA staff, already heavy, is uncertain given changes in the scope of construction permits and in the annual approval of environmental permits.

Finally, an assessment of performance is dependent upon the availability of accessible, timely, adequate information. The main source of information on regulatory and compliance assurance mechanisms is the annual activity reports produced by the various responsible bodies. The availability and form of such reports is variable. Some reports are essentially long lists of activities, others scanned in a way that prevents their being searched automatically or data being extracted.

Conclusions and recommendations

Permitting, environmental impact assessment and inspection

Recent legislative changes regarding annual visas on permits and a change in the scope of construction permits may alter the workload and effectiveness of the permitting regime. In addition, recent legislation waiving environmental protection laws in order to accelerate the implementation of nationally important projects sets a dangerous precedent. The current legislation on demolition and construction waste is inadequate.

Local authorities sometimes pay insufficient attention to the ramifications of rezoning, including mixed residential/commercial zoning, and to the required minimum distances from certain land uses.

Recommendation 2.1:
The Government should:

(a) Review and amend, if necessary, all legislation on measures deemed necessary for the implementation of projects of national importance, ensure its compliance with EU and international law and verify that adequate safeguards for public participation are in place;
(b) Develop, in consultation with relevant ministries, industry representatives and NGOs, legislation and procedures to control construction and demolition waste;
(c) Issue instructions to local authorities to respect minimum distances between different land uses and seek the advice of the environmental authorities before rezoning, if such is likely to lead to conflict between users because of incompatibilities.

Many of the bodies that are subsidiary to the Ministry of Environment, Waters and Forests, among others, have fewer staff on post than foreseen to fulfil responsibilities in relation to permitting, EIA and inspection.
Chapter 2: Regulatory and compliance assurance mechanisms

Recommendation 2.2:
The ministry or ministries in charge of the environment, water and forests should review staffing levels to understand whether the number of staff is adequate to undertake the identified regulatory and compliance assurance tasks and, in the absence of additional budget, to adjust the tasks accordingly.

Public participation and access to information

Arrangements for public participation in environment-related decision-making and access to environmental information are inadequate; access to justice in environmental matters has proven to be an important avenue for addressing failures. Public complaints are not routed efficiently. The Forest Inspector showed how the environmental authorities can provide effective tools.

Recommendation 2.3:
The ministry or ministries in charge of the environment, water and forests should:

(a) Review and strengthen its IT systems to support regulatory and compliance assurance mechanisms;
(b) Ensure that full documentation on permitting, environmental impact assessment, public participation arrangements, forest management plans and other matters is made available on its or its subsidiary bodies’ websites;
(c) Ensure that annual activity reports include performance statistics showing whether information is made available and in a timely manner, and that the reports be informative, concise and accompanied by statistical information;
(d) Ensure that the Forest Inspector is fully operational and available to the public, including its functionality for the display of satellite imagery;
(e) Review how public complaints are handled with a view to routing minor complaints to other local authorities and the police, which should in turn be provided with sufficient information to determine whether an infringement is taking place or has done so;
(f) Commission the Romanian Forest Research and Management Institute, or other independent competent body, to assess illegal logging, to be carried out in full transparency, and follow up accordingly to respond to the public’s concerns;
(g) Publish in full how hunting quotas are determined, the methodology applied and the underlying data used.

Compliance

Though more severe sanctions are being applied in some areas, they are insufficiently effective, proportionate and dissuasive in others and are sometimes suspended in key instances pending appeal, thus allowing damaging behaviour to continue. Despite some progress, few prosecutors are experienced in environmental law and the legal profession has insufficient expertise in environmental crime.

Recommendation 2.4:
The Government should:

(a) Amend, in consultation with relevant authorities and the public, the legal regime on contraventions to limit the use of injunctions to suspend sanctions, when such injunctions are likely to lead to continuing and possibly irreversible harm to the environment and/or human health;
(b) Continue to collaborate with EU and international institutions in raising awareness of and providing training on inspection and control activities in the field of environmental crime, involving both environmental and judicial authorities;
(c) Review and, as necessary, adjust fines so that they are effective, proportionate and dissuasive, in particular for legal entities.

Voluntary instruments

Not enough efforts are made to encourage the take up of EMAS, EMS and, especially, ecolabelling and sustainability reporting, including in support of SDG target 12.6. Sustainability reporting does not place sufficient emphasis on environmental and anti-corruption matters.
Recommendation 2.5: The ministry or ministries in charge of the environment, water and forests and the Department of Sustainable Development should collaborate with commerce and industry in promoting voluntary instruments that foster sustainable practices in companies and in requiring that all large companies produce sustainability reports as part of compulsory non-financial reports.
Chapter 3
GREENING THE ECONOMY AND FINANCING ENVIRONMENTAL PROTECTION

3.1 Greening the system of charges and taxes

Charges and fees related to pollutants

Air pollution

Air pollutants emissions are subject to a tax. Since the country participates in the EU Emissions Trading System (ETS) which limits the emissions of CO\textsubscript{2} and other greenhouses gases (GHG) such as methane, nitrous oxides (N\textsubscript{2}O), and carbon monoxide (CO), these are excluded from the tax. In particular, the tax is due for emissions of NO\textsubscript{x}, POPs, SO\textsubscript{x}, dust and heavy metals such as cadmium, lead and mercury (table 3.1). The tax rates have not changed since 2012.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Lei/ton</th>
<th>€/ton</th>
<th>CPI 2011=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>40</td>
<td>8.42</td>
<td>36.84</td>
</tr>
<tr>
<td>POPs</td>
<td>20,000</td>
<td>4,210.53</td>
<td>18,421.47</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>40</td>
<td>8.42</td>
<td>36.84</td>
</tr>
<tr>
<td>Dust</td>
<td>20</td>
<td>4.21</td>
<td>18.42</td>
</tr>
<tr>
<td>Cadmium</td>
<td>16,000</td>
<td>3,368.42</td>
<td>14,737.17</td>
</tr>
<tr>
<td>Lead</td>
<td>12,000</td>
<td>2,526.32</td>
<td>11,052.88</td>
</tr>
<tr>
<td>Mercury</td>
<td>20,000</td>
<td>4,210.53</td>
<td>18,421.47</td>
</tr>
</tbody>
</table>

Note: Figures in euros calculated using the average annual exchange rate for 2019, 1€ = 4.75 lei/

In addition to the air pollution tax, there are limits established on industrial emissions. The air pollutants covered by these limits are those subject to the tax as well as asbestos (suspended particulates, fibres); chlorine and its compounds; fluorine and its compounds; arsenic and its compounds; cyanides; polychlorinated dibenzodioxins, polychlorinated dibenzofurans, and substances and mixtures, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect reproduction system/fertility.

For the pollutants subject to a tax, the tax is to be paid on total emissions, and not only on those above the established limit values. Emissions in excess of the set limit are nevertheless subject to an additional fine for non-compliance.

Overall, the tax rates are relatively low, compared to selected countries (table 3.2), which suggests that they provide low incentives to emissions reductions and are essentially used to levy revenues. As a result, air quality continues to be poor, as assessed in the EC Environmental Implementation Review 2019.

<table>
<thead>
<tr>
<th>Country</th>
<th>NO\textsubscript{x}</th>
<th>SO\textsubscript{2}</th>
<th>Heavy metals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czechia</td>
<td>29.59</td>
<td>36.99</td>
<td>729.80</td>
</tr>
<tr>
<td>Estonia</td>
<td>122.00</td>
<td>145.00</td>
<td>1,278.00</td>
</tr>
<tr>
<td>Hungary</td>
<td>385.30</td>
<td>160.00</td>
<td>45,670.00</td>
</tr>
<tr>
<td>Poland</td>
<td>126.80</td>
<td>126.80</td>
<td>45,670.00</td>
</tr>
<tr>
<td>Romania</td>
<td><strong>5.40</strong></td>
<td><strong>5.40</strong></td>
<td><strong>2,700.00</strong></td>
</tr>
<tr>
<td>Slovakia</td>
<td>48.00</td>
<td>64.01</td>
<td>1,280.20</td>
</tr>
</tbody>
</table>

Source: OECD/EEA economic instrument database: https://pinedatabase.oecd.org/
Revenues from air pollution taxes and fines are paid to the Environment Fund and used to finance several environment-related subsidies and programmes.

**Water pollution**

There are taxes levied on 28 categories of water pollutants divided into general, specific, highly toxic and bacteriological. The tax rates have remained the same as in 2011 (table 3.3). Similar to the air pollutants, the tax rates remain relatively low compared to other European Union countries (table 3.4).

**Table 3.3: Taxes for wastewater discharges**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Unit</th>
<th>Lei</th>
<th>€</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General chemical indicators</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total suspended materials</td>
<td>Lei/ton</td>
<td>11.38</td>
<td>2.40</td>
</tr>
<tr>
<td>Chlorides, Sulphates</td>
<td>Lei/ton</td>
<td>46.65</td>
<td>9.82</td>
</tr>
<tr>
<td>Sodium, potassium, calcium, magnesium</td>
<td>Lei/ton</td>
<td>46.65</td>
<td>9.82</td>
</tr>
<tr>
<td>Nitrates</td>
<td>Lei/ton</td>
<td>46.65</td>
<td>9.82</td>
</tr>
<tr>
<td>Free residual chlorine</td>
<td>Lei/ton</td>
<td>46.65</td>
<td>9.82</td>
</tr>
<tr>
<td>Ammonium, Nitrogen</td>
<td>Lei/ton</td>
<td>1,86.10</td>
<td>39.18</td>
</tr>
<tr>
<td><strong>Biochemical oxygen consumption</strong></td>
<td>Lei/ton</td>
<td>46.53</td>
<td>9.80</td>
</tr>
<tr>
<td>Phosphates</td>
<td>Lei/ton</td>
<td>9.20</td>
<td>1.94</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>Lei/ton</td>
<td>186.10</td>
<td>39.18</td>
</tr>
<tr>
<td>Manganese</td>
<td>Lei/ton</td>
<td>465.39</td>
<td>97.98</td>
</tr>
<tr>
<td>Aluminium, total iron</td>
<td>Lei/ton</td>
<td>558.44</td>
<td>117.57</td>
</tr>
<tr>
<td>Extractable substances with petroleum ether, Oil products</td>
<td>Lei/ton</td>
<td>348.94</td>
<td>73.46</td>
</tr>
<tr>
<td>Synthetic anionactive, Biodegradable detergents</td>
<td>Lei/ton</td>
<td>186.10</td>
<td>39.18</td>
</tr>
<tr>
<td>Dry filterable residue at 105°C C</td>
<td>Lei/ton</td>
<td>42.43</td>
<td>8.93</td>
</tr>
<tr>
<td><strong>Specific chemical indicators</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulphites, fluorides, phenols which can be transported by vapor in the water</td>
<td>Lei/ton</td>
<td>186.10</td>
<td>39.18</td>
</tr>
<tr>
<td>Nickel, chrome</td>
<td>Lei/ton</td>
<td>11,637.40</td>
<td>2449.98</td>
</tr>
<tr>
<td>Ammonia</td>
<td>Lei/ton</td>
<td>11,637.40</td>
<td>2449.98</td>
</tr>
<tr>
<td>Barium, zinc, cobalt</td>
<td>Lei/ton</td>
<td>558.44</td>
<td>117.57</td>
</tr>
<tr>
<td>Sulfides, hydrogen sulfide</td>
<td>Lei/ton</td>
<td>581.83</td>
<td>122.49</td>
</tr>
<tr>
<td><strong>Toxic and very toxic chemical indicators</strong></td>
<td>Lei/ton</td>
<td>36,196.13</td>
<td>7,620.24</td>
</tr>
<tr>
<td>Arsenic</td>
<td>Lei/ton</td>
<td>36,196.13</td>
<td>7,620.24</td>
</tr>
<tr>
<td>Cyanides</td>
<td>Lei/ton</td>
<td>46,549.74</td>
<td>9,799.95</td>
</tr>
<tr>
<td>Mercury, cadmium</td>
<td>Lei/ton</td>
<td>11,637.40</td>
<td>2,449.98</td>
</tr>
<tr>
<td>Lead, silver, chrome, copper, molybdenum</td>
<td>Lei/ton</td>
<td>11,637.40</td>
<td>2,449.98</td>
</tr>
<tr>
<td><strong>Bacteriological indicators</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total coliform bacteria</td>
<td>10^9 bacteria / 100 cm³</td>
<td>3.84</td>
<td>0.81</td>
</tr>
<tr>
<td>Faecal coliform bacteria</td>
<td>10^7 bacteria / 100 cm³</td>
<td>67.35</td>
<td>14.18</td>
</tr>
<tr>
<td>Faecal sneezing</td>
<td>streptococci / 100 cm³</td>
<td>173.31</td>
<td>36.49</td>
</tr>
</tbody>
</table>

*Source: GEO No. 107/2002.*

**Table 3.4: Comparison of water pollution taxes, €/ton**

<table>
<thead>
<tr>
<th></th>
<th>BOD</th>
<th>COD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czechia</td>
<td>591.80</td>
<td>591.80</td>
</tr>
<tr>
<td>Estonia</td>
<td>1,435.00</td>
<td>1,435.00</td>
</tr>
<tr>
<td>Hungary</td>
<td>289.00</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>1,020.00</td>
<td>409.00</td>
</tr>
<tr>
<td>Romania</td>
<td>9.84</td>
<td>9.84</td>
</tr>
</tbody>
</table>

*Source: OECD/EEA economic instrument database: [https://pinedatabase.oecd.org/](https://pinedatabase.oecd.org/)*
The second EPR of Romania carried out 2012 in its Recommendation 5.1 asked the then Ministry of Environment and Forest to review air and water pollution taxes with a view to ascertaining and strengthening their environmental effectiveness, and to consider applying air pollution taxes to further major pollutants and submit relevant proposals to the Government for adoption. As of December 2019, the general framework for pollution taxation, as well as tax rates for air and water pollution have remained the same. Hence, the Recommendation 5.1 has not been implemented.

**Excise duties and transport-related charges**

**Excise duties**

Romania collects excise duties on energy products used as heating and transport fuel and for electricity production. The excise duties for diesel, leaded and unleaded petrol were above the minimum levels required by the EU (table 3.5). However, as of 31 December 2019, the Ministry of Finance announced that the legislation was amended and that the rates for these products in the 2020–2022 period are to be decreased and brought much closer to the minimum required levels (table 3.6).

There is a “diesel differential” (difference in the price of diesel versus petrol) which results in diesel being about 7 per cent cheaper when compared to unleaded petrol and about 19 per cent cheaper when compared to leaded petrol. This differential is slightly lower than that implied by the minimum rates set by the EU commission. Nevertheless, recent research suggests that from an environmental perspective, diesel should be taxed as much as other motor fuels.8

**Table 3.5: Excise duty rates on energy products, 2019**

<table>
<thead>
<tr>
<th>Energy Product</th>
<th>Unit</th>
<th>Excise duty rate Lei</th>
<th>€</th>
<th>Min. rate set by EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel</td>
<td>1,000 litres</td>
<td>1,895.94 (399.15)</td>
<td>330.00</td>
<td></td>
</tr>
<tr>
<td>Leaded petrol</td>
<td>1,000 litres</td>
<td>2,339.68 (492.56)</td>
<td>421.00</td>
<td></td>
</tr>
<tr>
<td>Unleaded petrol</td>
<td>1,000 litres</td>
<td>2,038.62 (429.18)</td>
<td>359.00</td>
<td></td>
</tr>
<tr>
<td>Natural gas as motor fuel</td>
<td>Gj</td>
<td>12.71 (2.68)</td>
<td>2.60</td>
<td></td>
</tr>
<tr>
<td>Kerosene as motor fuel</td>
<td>1,000 litres</td>
<td>2,179.28 (458.80)</td>
<td>330.00</td>
<td></td>
</tr>
<tr>
<td>Liquified gas as motor fuel</td>
<td>ton</td>
<td>626.84 (131.97)</td>
<td>125.00</td>
<td></td>
</tr>
<tr>
<td>Heavy fuel oil – heating, business</td>
<td>ton</td>
<td>73.31 (15.43)</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td>Heavy fuel oil – heating, non-business</td>
<td>ton</td>
<td>73.31 (15.43)</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td>Electricity – business</td>
<td>MWh</td>
<td>2.44 (0.51)</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Electricity - non-business</td>
<td>MWh</td>
<td>4.89 (1.03)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Coal and coke - heating, business</td>
<td>Gj</td>
<td>0.73 (0.15)</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Coal and coke - heating, non-business</td>
<td>Gj</td>
<td>1.46 (0.31)</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Kerosene – heating</td>
<td>1,000 litres</td>
<td>1,837.17 (386.77)</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Natural gas for heating - commercial purposes</td>
<td>Gj</td>
<td>0.84 (0.18)</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Natural gas for heating - non-commercial purposes</td>
<td>Gj</td>
<td>1.57 (0.33)</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Liquified gas - heating, business</td>
<td>ton</td>
<td>554.70 (116.78)</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Liquified gas for heating - domestic consumption</td>
<td>ton</td>
<td>0.00 (0.00)</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Ministry of Finance, 2019.

**Note:** Average exchange rate 2019 1€=4.75 lei.

**Table 3.6: Excise duty rate, 2020–2021, 2020, 1,000 litres**

<table>
<thead>
<tr>
<th>Year</th>
<th>Die 2020</th>
<th>Lei</th>
<th>€</th>
<th>Die 2021</th>
<th>Lei</th>
<th>€</th>
<th>De 2020</th>
<th>Lei</th>
<th>€</th>
<th>EU Min. levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>Diesel</td>
<td>1,625.37</td>
<td>342.18</td>
<td>1,518.04</td>
<td>319.59</td>
<td>319.59</td>
<td>330.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>Leaded petrol</td>
<td>2,085.97</td>
<td>439.15</td>
<td>1,948.23</td>
<td>410.15</td>
<td>410.15</td>
<td>421.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>Unleaded petrol</td>
<td>1,773.46</td>
<td>373.36</td>
<td>1,656.36</td>
<td>348.71</td>
<td>348.71</td>
<td>359.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Ministry of Finance, 2019.

**Vehicle registration fee**

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8 [www.oecd-ilibrary.org/taxation/the-diesel-differential_5jz14cd7hk6b-en](www.oecd-ilibrary.org/taxation/the-diesel-differential_5jz14cd7hk6b-en)
The vehicle registration fee was abolished since 2012, as it was considered by the EC that it discriminated against vehicles purchased in other EU member countries.

In February 2013, the GEO No. 9/2013 (and subsequent amendments) introduced a vehicle environmental stamp, as a replacement of the abolished vehicle registration fee. The stamp was to be paid only once, when the first owner in Romania recorded ownership of a vehicle and got a certificate of registration and the registration number for the car. The amount to be paid depended on grams of CO₂/km emitted, type of vehicle, engine capacity, the age of the vehicle, the type of ignition engine (spark /compression), value of tachometer expressed in km/year and the overall state of vehicle. From 2013 to 2017, this stamp allowed the Environment Fund Administration to collect a bit more than 2 billion lei (equivalent to €0.42 billion). In 2018 the revenues of the Environment Fund Administration were of 1.12 billion lei (€0.24 billion).

In 2017 however, following another infringement procedure by the EU, Romania issued the GEO No. 52/2017 stipulating the conditions of reimbursement of the stamp to people that had paid it since its implementation. Since 2018, the stamp has not appeared in the budget of the Environment Fund Administration.

**Road user tax**

At the time of the annual vehicle registration, owners of motor vehicles have to pay a “road tax” to local authorities. The tax rate depends on the engine capacity and the type of vehicle and varies from 8 to 290 lei (approximately €1.68 to €61) per 200 m³ increments of volume of the engine of cylinder capacity.

Some types of vehicles such as buses or minibuses, registered tractors and other vehicles with mechanical traction weighting up to 12 tons pay flat rates of 24, 18 and 30 lei per 200 m³ respectively (around 5, 3.79 and 6.3 €).

Several categories of owners such as veterans and disabled people are exempted from this tax. Also, county authorities can decide on exemptions or reductions of the tax for agricultural vehicles used in fields. Hybrid vehicles benefit from tax reductions of at least 50 per cent, the exact level of exemption being fall to the discretion of county councils.

The second EPR of Romania asked the Government to explore the scope for strengthening the role of fuel taxes and road user charges for dealing with road transport pollution (Recommendation 5.4). The road user charges have been updated in 2018 and some values have been increased. Regarding the fuel taxes, as explained above, they have been reduced from 31 December 2019 on and brought closer to the EU minimum required levels. Nevertheless, no assessment on how these taxes contribute to decreasing road transport pollution was carried out. Recommendation 5.4 was therefore only partially implemented.

Concerning the SDG target 9.1 (Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all), Romania does not measure the proportion of rural population living within 2 km of an all-season road, to be able to complete the global indicator 9.1.1. However, data show a sharp increase in the total kilometres of roads, including modernized, light asphalt and stone paved roads both at the county and communal levels. For instance, modernized roads at the county and communal level have increased by almost 40 per cent in the 2012–2018 period, according to the National Institute of Statistics (NIS). This certainly indicates that the proportion of rural population having access to all-season roads has increased.

In what concerns freight volumes by mode of transport, as per global indicator 9.1.2, the available figures from United Nations Statistics Division are 19 billion tons-kilometre for rail and 53 billion ton-kilometre for road in 2017. For passenger volume, the corresponding figures were almost 515 million passenger-kilometres for rail and 199 billion passenger-kilometres for roads, in 2017. Similarly, the NIS provides data on modals splits. The

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10 The stamp was abolished because it was also deemed illegal by the Court of Justice of the European Union ([https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:62014CJ0586](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:62014CJ0586)).
modal split of freight transport in 2017 was 30.2 per cent rail, 42.4 per cent road and 27.4 per cent for inland waterways. These shares have been relatively stable since 2012. For passenger transport, the split in 2016 was 4.2 per cent rail, 80.1 per cent road and 15.5 per cent bus.

Also, the share of passenger transport by road has been continuously increasing and roads capture most of the investments in the transport network (around 71 per cent in 2017). The use of public transport (bus, metro, trolley and tramway) at the national level—measured in thousands of passengers per kilometre—has decreased since 2000 (NIS).

This trend is to be associated with increased emissions from the transport sector. According to Eurostat, GHG emissions from fuel combustion in the transport sector in Romania increased from 15.25 million tons in 2012 to almost 18 million tons in 2017, with road transport accounting for around 96 per cent of these emissions. Development of transport network supports the economic development, but it is also causing a negative impact on environment.

Road tolls

The toll rates vary according to vehicle type and are specified in Government Ordinance No. 8/2010. They range from €28 per year for a car to €1,210 per year for freight vehicles of 12 tons or more.

The MO No. 1836/2018 further specifies particular rates for the use of bridges across the Danube River. These range from 14 lei to 173 lei per crossing in the direction Giurgiu to Ruse (approx. €3 to €36); from 11 lei to 64 lei per crossing for the Giurgeni-Vadu Oii bridge (approx. €2 to €13) and from 13 lei to 91 lei per crossing for the Fetesti-Cernavoda bridge (approx. €3 to €19).

Property and land tax

Legal entities and natural persons that own real estate, namely, land (agricultural, construction, forests and pastures) and buildings (residential and non-residential) are required to pay an annual property tax.

For buildings, legal entities pay between 0.08 per cent and 0.2 per cent of the taxable value for residential buildings and between 0.2 per cent and 1.3 per cent of the taxable value for non-residential buildings. For mixed-use buildings, the tax rate is calculated as the sum of the tax for the area that is used for residential purposes and the tax for the area used for non-residential purposes. Finally, for buildings used in agriculture, the tax rate is 0.4 per cent of the taxable value. The taxable value is generally determined by valuation for tax purposes (carried out by an authorized valuator, at the owner’s expense).

The land tax is a fixed amount per square metre, depending on factors such as: type of settlement; the location within the settlement (urban or rural areas); the use (e.g., for constructions, agriculture, fields, orchards, forests). The proceeds from property and land taxes are allocated to municipal budgets.

Fees for use of natural resources

Water abstraction charges

Water abstraction charges are paid by companies and households to Romanian Waters. The amounts are defined by the GD No. 1202/2010 (Table 3.7). They have not been updated since 2010 but a revision of these rates is currently being prepared by the Ministry of Environment, Waters and Forests.

The Recommendation 5.3 in the second EPR of Romania asked the Government to review the system of water abstraction charges and water supply and sewage tariffs and adjust rates with the aim to ensure the implementation of the principle of full cost recovery. The National Agency for Regulation of Public Services (ANRSC) has a methodology to define tariffs that ensures cost recovery for operators. However, the methodology was adopted in 2007 and has not been revised since then. Hence, it can be concluded that as at December 2019 Romania did not implement the Recommendation 5.3.

Table 3.7: Water abstraction charges, 1,000 lei/m³
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<table>
<thead>
<tr>
<th>Surface water</th>
<th>Lei</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic operators (including freight services), households, public institutions, units of cult, agrozootechnical economic operators</td>
<td>50.00</td>
</tr>
<tr>
<td>Electricity and heat producers using thermo-power and nuclear plants</td>
<td>24.00</td>
</tr>
<tr>
<td>Electricity and heat producers using hydropower plants, regardless of power installed</td>
<td>1.10</td>
</tr>
<tr>
<td>Irrigation</td>
<td>3.00</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>0.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Groundwater</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial economic operators</td>
<td>57.52</td>
</tr>
<tr>
<td>Households, public institutions, units of cult and others who use water for drinking purposes</td>
<td>57.52</td>
</tr>
<tr>
<td>Irrigation</td>
<td>57.52</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>11.00</td>
</tr>
<tr>
<td>Agrozootechnical economic operators</td>
<td>57.52</td>
</tr>
</tbody>
</table>


Fees for use of forest products

Timber extraction is also regulated and subject to fees. Companies interested in timber extraction need to obtain a permit and can participate in the annual auctions for timber organized by RomSilva, based on national forest management plans. In 2019, more than 9.5 million m³ of timber were adjudicated.

Fees for hunting and fishing

The national hunting grounds is about 22 million hectares and divided into 2,151 hunting grounds. Hunters pay a membership fee to adhere to a local hunting management entity and therefore be able to hunt in the area managed by said association. Administrative costs of a hunting area can reach tens of thousands of € a year. Consequently, there is a temptation to report higher wildlife numbers, to obtain higher harvesting quotas, which can be sold to trophy hunters.

At the same time, given Romania’s wildlife biodiversity, there an increasing demand for ecotourism and wildlife watching, which can bring economic benefits to hunting clubs and to local communities.13

Minimum tariff for recreational fishing in mountain areas is 20 lei/day (€4.2/day). This tariff is established and collected only by the fish fund manager.

Charges for exploration and exploitation of mineral resources

The National Agency for Mineral Resources collects royalties from the exploitation of mining resources. These are mainly on oil, natural gas, bauxite and coal. The royalty’s calculation varies depending on whether it concerns oil and gas or other mineral resources. The calculations of royalties for oil and gas exploitation are based on the following methodology:

- A percentage of the value of the gross output extracted ranging from 3.5 to 13.5 per cent for crude oil and from 3.5 to 13 per cent for gas;
- A share of 10 per cent of the value of the gross revenues realized from the oil transport and transit operations through the national systems of transport, as well as from the oil operations carried out through the oil terminals that are in the public property of the state;
- A share of 3 per cent of the value of the gross income realized from the operations of underground storage of natural gas.

Agents involved in mining activities also have to pay a mining royalty set by the Law No. 85/2003 with subsequent amendments. Fees and royalties for the mining sector were increased in 2014 and again in 2019. The

mining royalty is established at the conclusion of the license or at the issue of the operating permit, and is calculated as follows:

- A percentage of 5 per cent of the value of the mining production for ferrous, non-ferrous, aluminium and aluminiferous, radioactive minerals, rare and dispersed soils, precious and semi-precious stones, mining residual products, bituminous rocks, therapeutic mineral waters, thermal waters, geothermal waters and their accompanying gases, non-combustible gases, therapeutic muds and peat;
- A percentage of 4 per cent of the value of coal mining production;
- A percentage of 6 per cent of the value of the mining production for noble metals;
- The equivalent in lei of €0.875 per unit of mining production, for non-metallic substances;
- The equivalent in lei of €0.4375 per unit of mining production, for magmatic rocks, metamorphic rocks, industrial and construction limestone, dolomite, sandstone and industrial bushes;
- The equivalent in lei of €0.50 per unit of mining production, for clays, marls, loess, sand and gravel, sand and kaolin rocks;
- The equivalent in lei of €0.6875 per unit of mining production, for industrial alabaster, pumice stone, non-finite syenites, gypsum, chalk, silicon sand, bentonite, kaolin sand, slate and diatomite;
- The equivalent in lei of €2.5 per unit of mining production, for ornamental basalt, ornamental dacite, ornamental andesite, ornamental rhyolite, ornamental granite and ornamental granodiorite;
- The equivalent in lei of €3.125 per unit of mining production, for ornamental alabaster, ornamental aragonite and ornamental silicones;
- The equivalent in lei of €3.75 per unit of mining production, for marble, ornamental limestone, ornamental sandstone, travertine and ornamental bushes;
- The equivalent in lei of €1.0 per unit of mining production, for halosal salts.

Companies operating in the mining sector need to obtain first an exploration/prospecting permit and then an exploitation one.

The annual tax rate for prospecting is 341 lei/km² (€72/km²), for exploration 1,367 lei/km² (€288/km²), which doubles after two years and becomes 5 times larger after four years, and finally for exploitation 34,180 lei/km² (€7,196/km²).14

Mineral water abstraction is subject to a fee established at the source, and equivalent to 4 €/1,000 litres. The payment is made in lei at the exchange rate of the National Bank of Romania at the date of payment.

On top of royalties and/or abstraction fees, operators must set aside funds for environmental restoration budget for environmental restoration and this budget has to be approved by the National Agency for Mineral Resources. At the end of activities, the company restores the area where the activities took place. Then, a committee formed by representatives of the National Agency for Mineral Resources, NEPA, Romanian Waters and of the company itself analyse the restoration work undertaken. If the restoration work is not approved, the company might be subject to fines.

**Tariffs for utility services**

Mainly two tariff-collection methods are applied: operators collect directly from end users (households/companies) or municipalities set taxes/charges based on tariffs and use them to pay operators. Some municipalities use a mix of these two methods, in which the large economic agents have direct contracts with the operators, while others (citizens) pay via local taxes/charges.

**Tariffs for municipal waste management**

14 Prospecting is the first stage of mineral exploration, usually consisting of soil and sediments analysis. Exploration is the second phase and is undertaken on “promising” prospected grounds. The most widely used exploration technique is the drilling of probe holes.
The tariffs for municipal waste management, on top of the cost recovery and profits constraint, include a payment for the “contribution to the circular economy”. This contribution was set at 30 lei (€6/ton) per ton in 2019 and increased to 80 lei (€17) per ton in 2020. This, however, concerns only waste going to landfills.

Romania implements a packaging tax: all economic operators are responsible for all packaging waste generated. Therefore, they are responsible for recovering waste from the market, including recycling and/or other types of recovery such as energy recovery. The MO No. 578/2006 has been amended several times, to improve the efficacy of the instrument and eliminate the incorrect interpretation of the law. As of March 2019, the tax rate for primary reusable packaging used for products intended for population consumption is 0.5 lei (€0.10) per package. Also, fines for non-compliance range from 1,000 lei (€210.5) to 2,000 lei (€421) for the natural persons, and from 20,000 lei (€4,210) to 40,000 lei (€8,421) for legal entities.

The proceeds from the contribution to the circular economy and from the packaging tax are paid to the Environment Fund.

Recommendation 5.2 made in the second EPR of Romania asked the Government to: (a) monitor and evaluate the impacts of the waste management taxes and other waste charges on waste generation; (b) ensure that municipal waste collection charges are applied systematically across the country and that there are adequate incentives for waste sorting, deposit-refunding schemes and waste recycling; and (c) set waste taxes and charges for manufacturing waste. There is no evidence of systematic use of impact assessment methods to evaluate the welfare and/or environmental impact of the implemented waste management policies. Nevertheless, efforts have been made to decrease municipal waste by imposing waste charges and a new landfill tax. Also, more ambitious targets for recycling were set in the 2017 National Waste Management Plan. The implementation of the Plan is expected to ensure a more homogeneous policy implementation across the country. Recommendation 5.2 was only partially implemented.

**Tariffs for water supply and sewerage services**

Drinking water supply and wastewater collection and treatment is the responsibility of local councils and the water infrastructure is the property of these local authorities. Therefore, the water sector operators are public-owned companies, with the shareholders being the different intercommunity development associations. The two exceptions are Bucharest and Ploiesti, where two large local water utilities were created in 2000, as a result of an international public tender; they are thus commercial companies with mixed capital (public and private).

According to the National Institute of Statistics, the urban population connected to a public water supply system increased from 12.1 million in 2012 to 13.5 million in 2018. The country has 102 licenced operators and according to the National Romanian Regulator for Public Services, tariffs for drinking water supply as of November 2019 ranged from 2.6 lei (€0.55) per m³ to 5.2 lei (€1.1) per m³, without VAT. Around 10 million people were connected to urban wastewater collection systems in 2018 –i.e., around 80 per cent of urban population–, up from 8.6 million in 2012. There remain areas where households are not connected to water supply and sewage systems, mainly in the rural parts of the country. For instance, in the North-East region on the country only around 30 per cent of the population had access to sewage services in 2018.

Generally, water operators are responsible for sewage services as well. Municipal tariffs for sewage ranged from 1.1 lei (€0.23) per m³ to 4.4 lei (€0.93) per m³ without VAT, and 159 operators had valid licenses as of December 2019. These tariffs include the taxes that operators have to pay for wastewater discharges.

**Electricity and gas tariffs**

According to the National Energy Regulatory Authority regulations, domestic customers have an unconditional right to universal service, i.e., they have the right to be provided with electricity under quality conditions and at reasonable, transparent and non-discriminatory rates. There are two types of electricity providers: Providers of last-resort–there are currently 5 of these–which are public operators having the obligation of supplying all consumers under the universal service rules, and Competitive suppliers which can freely negotiate their tariffs with customers. Only residential users and small and medium enterprises can claim to be provided under the universal service rules.
The methodology for calculating gas tariffs is set by the Government Ordinance No. 41/2019. Similar to the electricity tariffs, the rationale behind the determination of gas tariffs is cost recovery plus some margin of profit. There are no incentives for end-users to decrease consumption. However, electricity consumers do pay an additional charge (0.0185 lei/kWh) to support power plants producing electricity in high-efficiency co-generation. Average electricity and gas tariffs for households and enterprises remain lower in Romania than in the EU-28 zone (table 3.8).

<table>
<thead>
<tr>
<th>Table 3.8: Electricity and gas prices, 2019*, €/kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>EU-28 average</td>
</tr>
<tr>
<td>Romania</td>
</tr>
</tbody>
</table>

Source: Eurostat  
Note: *: first semester

Overall, the general principle guiding the tariff setting for public utilities is cost recovery plus profits, with profits being capped by affordability limits set by law. The main issue remains the fact that there are no (or only very low) economic incentives for municipal or household waste reduction nor for the conservation of water and electricity.

For average-income urban households, expenditures on utilities are affordable; they spent 7.99 per cent of their income on housing, water, electricity and gas. The average at the EU level (without distinction of rural or urban), for the same category of expenditures, was 28 per cent in 2018. However, Romania has high income inequalities and the question of affordability of public utility services is central. For instance, in 2018, an estimated 9.6 per cent of the population in Romania could not keep their houses adequately warm during winter, compared to 7.6 per cent at the EU-level. To help vulnerable households, several measures are implemented, including financial assistance to households to pay their heating bills during winter (November 1 – March 31) and a social tariff for electricity bills. Finally, Law 196/2016 establishes a minimum income of inclusion for poor households.

The second EPR of Romania in its Recommendation 5.5 asked the Government to: (a) gradually raise gas prices to levels that correspond to effective unit supply costs; (b) phase out regulated electricity and gas prices; and (c) retain effective support of vulnerable consumers by means of well-targeted direct income support. According to Eurostat, the gas prices have increased since 2012, from €0,027/kWh to around €0,035/kWh in 2019 (including taxes). Romania applies excise duties on energy products and has set them at the minimal levels to comply with EU regulations. However, there is no plan to phase out regulated electricity and gas prices. Support to vulnerable households is maintained via utilities’ social tariffs for vulnerable households as well as the minimum income for inclusion. Therefore, the Recommendation 5.5 is partially implemented.

Feed-in tariffs for renewable energy sources

To support the emergence of new investments in the renewable energy sector, the Romanian Parliament adopted in 2004 a scheme consisting of mandatory quotas for electricity from renewable energy sources (RES), as well as the trading of renewable energy certificates—also called green certificates. The scheme has been updated over the years to increase the incentives required to meet the national objectives set by the EC for 2020.

The scheme works as follows. On the one hand, green certificates (GC) are granted to energy producers depending on the renewable source used for electricity production, i.e. hydropower, wind, solar, biomass landfill gas, sewerage treatment plants gas and geothermal energy. On the other hand, the National Energy Regulatory Authority imposes annual RES quotas, expressed in GC/MWh, that “conventional” electricity suppliers need to purchase, thus creating a demand for GC. Quotas are calculated taking into consideration the estimated final energy consumption for the upcoming year and the average impact on the final price that consumers have to pay.

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16 www.energypoverty.eu/indicator?primaryId=1461&type=bar&from=2018&to=2018&countries=EU,RO&disaggregation =none
For example, for 2019, the impact on the final price should not exceed €12.5/MWh.\textsuperscript{17} If a supplier (or a producer) fails to meet the RES quota prescribed by the National Energy Regulatory Authority until 15 April for the previous year, he/she will be obliged to purchase the missing certificates at €110 per certificate. The penalty goes to the Environment Fund.\textsuperscript{18}

The price of these certificates is both floored and capped, i.e., there is a set minimum and maximum price allowed, with limit price values revised annually to account for inflation. The minimum price (€29.4/MWh) guarantees a minimal revenue for RES electricity suppliers while the maximum price (€35/MWh) limits the impact on final users bills.

This RES scheme certainly contributed to the increase of RES electricity share in total electricity production from 27.1 per cent in 2011 to 39.4 per cent in 2017, according to the National Institute of Statistics. By the end of 2018 RES capacity was of 4,785 MW, with 766 producers (source: former Ministry of Energy).

The Recommendation 5.6 of the second EPR of Romania asked the Government to (a) closely monitor and regularly evaluate the effectiveness and efficiency of the quota obligation and green certificates system in achieving the renewable energy targets as well as the interactions with the EU ETS; (b) consider phasing out support for renewable energy sources once they become competitive with fossil fuels; and (c) establish a timetable for phasing out existing coal subsidies. The green certificates and the quotas obligations are monitored by the energy regulation agency and revised periodically. However, there is no mention in the different environment-related plans and strategies of intentions to phase-out support for RES or of a concrete timetable regarding coal subsidies. Hence, Recommendation 5.6 was only partially implemented.

### Participation in EU ETS

Romania has participated in the EU ETS scheme since it became an EU member. The EU-wide 2013 cap for emissions from stationary installations was set at around 2,084 million allowances. This cap was meant to decrease each year by a linear reduction factor of 1.74 per cent of the average total quantity of allowances issued annually in 2008–2012, thus ensuring that the number of allowances that can be used by stationary installations will be 21 per cent lower in 2020 than in 2005. The aviation sector cap was originally set at around 210 million allowances per year, which is 5 per cent below the average annual level of aviation emissions in 2004–2006. It increased by 116,524 aviation allowances on 1 January 2014 to accommodate Croatia joining the EU ETS.

Although in phase 3 of the EU ETS the default allocation method is auctioning, a significant amount of allowances can be allocated for free and following EU-wide harmonised rules. Romania is one of the 10 EU Member States (Bulgaria, Czechia, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland and Romania) which benefit from this limited and temporary derogation from the rule of forbidding the distribution of free allowances to the electricity sector. In return, the countries benefitting from this exception had to draw plans for investing in the modernization of their electricity sectors. Thus, electricity production partly received a free allocation of certificates. The free certificates were supposed to be eliminated until this year. Nevertheless, EU decided that transitional free allocation should be available for some Member States also during phase 4 (2021–2030). Romania, as well as Bulgaria and Hungary, has decided to make use of transitional free allocation in phase 4. For Romania, tables 3.9 and 3.10 show the total amount of free allowances as well as on the amount distributed to electricity producers while table 3.11 shows revenues collected from the auctioning of allowances for the 2012–2018 period.

### Table 3.9: Free allowances allocated for modernising the electricity sector, 2013–2018, number

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15,748,011</td>
<td>8,591,461</td>
<td>9,210,797</td>
<td>7,189,961</td>
<td>622,255</td>
<td>3,778,439</td>
</tr>
</tbody>
</table>


\textsuperscript{17} The National Energy Regulatory Authority developed a methodology for defining the obligatory annual quota acquisition of Green Certificates following the provision of the Law. No. 220/2008. The methodology entered into force on 1 August 2018 (Decree No. 147/2018).

\textsuperscript{18} Given that the price of GC is always between €29.4 and €35, having to buy a certificate at €110 represents a penalty of €75–€80.6.
### Table 3.10: Maximum number of free allowances per year under the derogation from full auctioning for electricity and heat production, 2013–2019, number

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>17,852,479</td>
</tr>
<tr>
<td>2014</td>
<td>15,302,125</td>
</tr>
<tr>
<td>2015</td>
<td>12,751,771</td>
</tr>
<tr>
<td>2016</td>
<td>10,201,417</td>
</tr>
<tr>
<td>2017</td>
<td>7,651,063</td>
</tr>
<tr>
<td>2018</td>
<td>5,100,708</td>
</tr>
<tr>
<td>2019</td>
<td>2,550,354</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>71,409,917</strong></td>
</tr>
</tbody>
</table>


### Table 3.11: Revenues from the auctioning of emission allowances, 2012–2018, € millions

<table>
<thead>
<tr>
<th>Year</th>
<th>General (early auctions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>39.71</td>
</tr>
<tr>
<td>2013</td>
<td>122.74</td>
</tr>
<tr>
<td>2014</td>
<td>97.57</td>
</tr>
<tr>
<td>2015</td>
<td>193.62</td>
</tr>
<tr>
<td>2016</td>
<td>193.56</td>
</tr>
<tr>
<td>2017</td>
<td>260.29</td>
</tr>
<tr>
<td>2018</td>
<td>717.64</td>
</tr>
</tbody>
</table>


### 3.2 Greening the subsidies system

#### Fossil fuel subsidies

All EU Member States subsidise the use and/or production of fossil fuels to some extent, and the EC estimates that fossil fuel subsidies in the EU between 2008 and 2016 were €55 billion. However, States do not openly communicate on their fossil fuel subsidies.

The SDG target 12.c (rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities). No data are available on the global indicator 12.c.1 ((a) Amount of fossil-fuel subsidies as a percentage of GDP; and (b) amount of fossil-fuel subsidies as a proportion of total national expenditure on fossil fuels).

Romania does not publish subsidies or tax breaks given to fossil fuels. Fossil fuels play an important role in Romania’s energy mix. According to the former Ministry of Energy, in 2019, around 38.8 per cent of electricity in the country was produced using fossil fuels - out of which 15.4 per cent were produced using oil and 23.4 per cent using coal. Also, an aid to decrease energy poverty, including a social tariff for electricity was in place until 1 January 2018 (208 million lei in 2015) and an aid for heating and subsidies for heat, applying directly to the energy price (900 million lei in 2015).

The draft Integrated National Plan on Energy and Climate Change 2021–2030 states that current fossil fuels subsidies relate mainly to the assistance to decrease energy poverty, i.e., to help households that otherwise could not afford electricity and heating services. The Plan mentions the need to phase-out support for fossil fuels, but without any concrete timeline or further details. while Romania has reiterated its commitment to end fossil fuel subsidies or to undertake wider green fiscal policy reforms, no concrete steps (such as a timeline) are discussed in the document. Major challenges faced by Romania regarding this phasing-out are inefficient energy infrastructure and energy poverty, as well as the willingness to maintain energy independence.

#### Investment incentives

Under the Fiscal Code (Law No. 227/2015 with subsequent amendments), expenses incurred for environmental protection and resource conservation are deductible from corporate taxable income. Companies can also deduct their research and development expenses from their taxable income. Moreover, accelerated depreciation may be applied for devices and equipment used in research and development activities.

Regarding investments in the energy sector, the draft Integrated National Plan on Energy and Climate Change 2021–2030 states that there is an initiative in Romania that envisages the development of Contract for Difference

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(CfD) support mechanism to encourage priority investments with low-carbon technologies that are needed in the Romanian energy sector. These Contracts would complement the Green Certificates scheme.

In its Strategy for Romania, adopted in 2015, the European Bank for Reconstruction and Development estimated that access to finance was still limited, particularly for small and medium-sized enterprises (SMEs), and the overall level of corporate investment in Romania remained low. The key factors limiting competitiveness and discouraging stronger investment included bureaucratic obstacles to doing business, the significant role of inefficient state-owned companies and the bottlenecks caused by Romania’s poor national infrastructure. As of November 2019, the bank had a portfolio of projects worth €1,808 million, of which 38 per cent were projects related to sustainable infrastructure.

Value added tax

VAT reductions on certain goods and services act as implicit subsidies. In Romania, there is a reduced VAT rate of 9 per cent (compared to the standard of 19 per cent) for fertilizers and pesticides and for water supply for irrigation. Water supply and sewage services for households also benefit from this reduced rate. The aircraft fuels are completely exempt from VAT. Given the potential negative environmental externalities associated with fertilizers and pesticides use, no assessment on the environmental impact of these VAT reductions was no carried out.

3.3 Evaluation of the impact of country’s efforts in greening the tax, tariff and subsidies systems

Overall, revenues from environmental taxes in Romania were about 20 billion lei in 2018, which amounted to about 2.09 per cent of the country’s GDP for that year (table 3.12). The main source of revenues are energy taxes, which accounted for almost 95 per cent of all environmental tax revenue. The levels of environmental tax revenues remain low, compared to other European countries: in 2018, Romania ranked 24 out of 28 in this aspect, with the highest amounts being collected by Germany (€59,737 million - 1.9 per cent of GDP) and the lowest by “small” states like Lichtenstein (€ 46.7 million) and Iceland (€280,71 million). The relatively low level of revenues for Romania is mainly due to low tax rates and low charges when it comes to environmental externalities and resource extraction.

Table 3.12: Environmental tax revenues, 2012–2018, million lei

<table>
<thead>
<tr>
<th>Tax category</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy taxes</td>
<td>10,112.20</td>
<td>10,964.60</td>
<td>13,728.89</td>
<td>15,457.22</td>
<td>15,948.41</td>
<td>15,122.69</td>
<td>18,380.90</td>
</tr>
<tr>
<td>Transport taxes</td>
<td>1,567.80</td>
<td>1,757.30</td>
<td>1,748.70</td>
<td>1,791.50</td>
<td>1,799.90</td>
<td>1,178.30</td>
<td>1,307.30</td>
</tr>
<tr>
<td>Pollution taxes</td>
<td>22.37</td>
<td>22.82</td>
<td>19.88</td>
<td>20.50</td>
<td>21.41</td>
<td>24.00</td>
<td>23.90</td>
</tr>
<tr>
<td>Resource taxes</td>
<td>36.00</td>
<td>26.20</td>
<td>24.60</td>
<td>16.00</td>
<td>25.60</td>
<td>20.70</td>
<td>20.10</td>
</tr>
<tr>
<td>Total</td>
<td>11,738.37</td>
<td>12,770.92</td>
<td>15,522.07</td>
<td>17,285.22</td>
<td>17,795.32</td>
<td>16,345.69</td>
<td>19,732.20</td>
</tr>
</tbody>
</table>


Both goals 8 and 12 through their targets 8.4 (improve progressively, through 2030, global resource efficiency in consumption and production and endevour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead) and 12.2 (by 2030, achieve the sustainable management and efficient use of natural resources) pertain to the increase in resource efficiency. In 2018, the country’s resource productivity was €0.3784 per kilogram, chain linked value (2010), much lower than the EU average of €2.07/kg (Eurostat). Domestic material consumption has increased over the years and was of 449.8 million tons in 2018 (Eurostat), i.e., much higher than in Hungary (151.5 million tons) or Slovenia (29.9 million tons). According to the Global Material Flows Database of Environment Live, the domestic material consumption (indicators 8.4.2 and 12.2.2

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20 According to the International Energy Agency, Contracts for Difference are concluded between the renewable generator and a government-owned company and are based on a difference between the market price and an agreed “strike price”. If the “strike price” is higher than a market price, the Counterparty of the Contracts must pay renewable generator the difference between the “strike price” and the market price. If the market price is higher than the agreed “strike price”, renewable generator must pay back the Counterparty the difference between the market price and the “strike price”.

21 www.ebrd.com/where-we-are/romania/overview.html

22 Romania’s GDP in 2018 was estimated at 944.220 billion lei (World Bank).

(Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP) in Romania increased by 11.3 per cent in the period 2010–2017 (table 3.13). No data are available on global indicators 8.4.1 and 12.2.1 (Material footprint, material footprint per capita, and material footprint per GDP).

Table 3.13: Domestic material consumption, by type of raw material, 2010–2017, 1,000 tons

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>206,591</td>
<td>217,888</td>
<td>199,676</td>
<td>209,805</td>
<td>217,850</td>
<td>223,785</td>
<td>226,719</td>
<td>229,925</td>
</tr>
<tr>
<td>Biomass, of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop residues</td>
<td>65,507</td>
<td>73,358</td>
<td>53,439</td>
<td>70,923</td>
<td>75,154</td>
<td>76,983</td>
<td>77,529</td>
<td>78,075</td>
</tr>
<tr>
<td>Crops</td>
<td>25,114</td>
<td>30,983</td>
<td>18,643</td>
<td>31,026</td>
<td>33,282</td>
<td>33,806</td>
<td>34,331</td>
<td>34,856</td>
</tr>
<tr>
<td>Grazed biomass and fodder crops</td>
<td>25,552</td>
<td>31,552</td>
<td>20,548</td>
<td>26,543</td>
<td>28,285</td>
<td>28,171</td>
<td>28,057</td>
<td>27,943</td>
</tr>
<tr>
<td>Wild catch and harvest</td>
<td>19</td>
<td>19</td>
<td>26</td>
<td>28</td>
<td>32</td>
<td>30</td>
<td>28</td>
<td>26</td>
</tr>
<tr>
<td>Wood</td>
<td>6,511</td>
<td>6,455</td>
<td>7,877</td>
<td>6,858</td>
<td>6,974</td>
<td>8,223</td>
<td>8,189</td>
<td>8,155</td>
</tr>
<tr>
<td>Fossil fuels, of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>50,880</td>
<td>55,191</td>
<td>53,734</td>
<td>42,861</td>
<td>41,792</td>
<td>42,355</td>
<td>41,164</td>
<td>40,155</td>
</tr>
<tr>
<td>Petroleum</td>
<td>33,128</td>
<td>37,308</td>
<td>35,953</td>
<td>26,572</td>
<td>25,378</td>
<td>26,264</td>
<td>25,499</td>
<td>24,782</td>
</tr>
<tr>
<td>Natural gas</td>
<td>9,893</td>
<td>8,519</td>
<td>8,546</td>
<td>8,091</td>
<td>8,676</td>
<td>8,617</td>
<td>8,464</td>
<td>8,310</td>
</tr>
<tr>
<td>Metal ores, of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-ferrous ores</td>
<td>8,983</td>
<td>8,519</td>
<td>8,546</td>
<td>8,091</td>
<td>8,676</td>
<td>8,617</td>
<td>8,464</td>
<td>8,310</td>
</tr>
<tr>
<td>Ferrous ores</td>
<td>8,769</td>
<td>9,364</td>
<td>9,235</td>
<td>8,198</td>
<td>7,738</td>
<td>7,474</td>
<td>7,201</td>
<td>7,063</td>
</tr>
<tr>
<td>Non-metallic minerals, of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-metallic minerals - industrial</td>
<td>3,644</td>
<td>3,799</td>
<td>4,123</td>
<td>3,667</td>
<td>4,720</td>
<td>4,091</td>
<td>3,943</td>
<td>2,983</td>
</tr>
<tr>
<td>Non-metallic minerals - construction dominant</td>
<td>3,381</td>
<td>3,671</td>
<td>3,763</td>
<td>3,050</td>
<td>3,285</td>
<td>2,761</td>
<td>2,267</td>
<td>1,862</td>
</tr>
<tr>
<td>Domestic material consumption per capita, by type of raw material (tons)</td>
<td>10.11</td>
<td>10.74</td>
<td>9.90</td>
<td>10.45</td>
<td>10.91</td>
<td>11.26</td>
<td>11.46</td>
<td>11.68</td>
</tr>
<tr>
<td>Domestic material consumption per unit of GDP, by type of raw material (kg per constant 2010 US$)</td>
<td>1.240</td>
<td>1.281</td>
<td>1.160</td>
<td>1.177</td>
<td>1.186</td>
<td>1.172</td>
<td>1.132</td>
<td>1.074</td>
</tr>
</tbody>
</table>


3.4 Investing in environmental protection and green economy

Implementation costs for environment-related strategies, programmes and plans

In 2017, the then Ministry of Environment estimated that the overall implementation cost for the National Waste Management Plan would be of €1.15 million. This would represent a cost of around €60 per inhabitant and could be achieved by increasing the stringency of already existent economic-incentive mechanisms.

The estimated necessary energy sector investments to achieve the goals set in the Integrated National Plan on Energy and Climate Change 2021–2030 are of €22 billion. The Plan envisages the financing through more stringent taxes, and investments from private sector and foreign resources.

Green public procurement

Romania has passed a law establishing the general principles of green public procurement, the Law on Green Public Procurement No. 69/2016, which represents a step towards target 12.7 (promote public procurement practices that are sustainable, in accordance with national policies and priorities). However, implementation of the Law has been delayed by the lack of national guidelines that can help civil servants actually put these principles in practice when setting conditions for goods or service contracts. The authority in charge of the environment had the obligation to elaborate a national plan for green public procurement, which had to be approved by a governmental decision no later than October 2017. Such plan was required to include mandatory multi-annual targets for green public procurement for all the categories of products, services and works and address the rules for contracting with (public) authorities. However, as of December 2019, such a plan was not finalized, which renders the Law on Green Public Procurement ineffective for the time being.
The then Ministry of Environment has partnered in GPPbest, an EU LIFE funded project, which seeks to encourage the exchange of good practice and develop tools for green public procurement in Romania and Italy. The Ministry elaborated a guide including the minimum requirements regarding environmental protection for certain groups of products and services. In 2018, the then Ministry of Environment and the National Agency for Public Procurement adopted this guide (MO No. 1068/1652/2018).

As part of GPPbest, three pilot projects were implemented in 2017, where Romanian public institutions imposed green criteria in public procurement contracts.

First, NEG introduced specific requirements for environmentally friendly cleaning products, toilet paper and paper towels for its 35 offices. Green considerations were introduced as minimum technical specifications, derived from the EU Ecolabel. Amongst the bids received, only one was fully compliant with the tender requirements. The final contract price was 339,500 lei (approximately €72,840). In the same vein, the Ministry of Environment, Waters and Forests purchased office material for one of its projects using criteria for office supplies and equipment derived from the EU Green Public Procurement criteria. The purchase was of 19,800 lei (€4,170). Finally, still in 2017, the National Meteorology Agency also applied Green Public Procurement criteria for the purchase of organic cleaning products in value of approximately 3,426 lei (€720).

The GPPbest project was finalized in 2018. Romania now participates in the follow-up project, GPP Stream (2018–2020) which focuses on the adoption and management of GPP in relation to EU funds, in the undertaking of the tool by beneficiaries and in the monitoring of GPP implementation, hence in the evaluation and mainstreaming of its benefits. On top of the Ministry of Environment, the North-East Regional Development Agency also participates. For the moment, Romanian actions revolved around discussing the draft of a national action plan of GPP.

Encouragement of the wider use of Green Public Procurement is also one of the measures the Government plans to use to achieve the goals set in its draft Integrated National Plan on Energy and Climate Change 2021–2030.

**Expenditures on environmental protection**

**Government sector**

Information on environmental protection expenditures for the aggregate government sector is published in the annual budgets based on the international Classification of Functions of Government (COFOG) (Table 3.14). Environmental protection expenditures had an average share of 2 per cent of total central government expenditures during the period 2012–2018. Most of the expenditures concern waste and wastewater management, as well as pollution abatement (98 per cent of total expenditures in 2018). The share of these categories also remained relatively stable during the 2012–2018 period, while expenditures for R&D and Biodiversity protection had a higher fluctuation from a year to another.

| Table 3.14: Government expenditures in environmental protection, 2012–2018, million lei |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|
|                                 | 2012     | 2013     | 2014     | 2015     | 2016     | 2017     | 2018     |
| Total                           | 3,571.2  | 2,905.4  | 3,132.5  | 4,507.5  | 5,520.7  | 4,310.4  | 7,180.5  |
| Air                             | 176.5    | 138.6    | 106.0    | 226.1    | 610.7    | 685.2    | 1,181.4  |
| Water                           | 1,494.6  | 673.3    | 869.8    | 852.2    | 1,179.4  | 866.7    | 1,303.3  |
| Waste                           | 1,784.7  | 1,977.7  | 2,041.1  | 3,189.0  | 2,042.9  | 2,289.3  | 2,334.1  |
| Soil and underground water      | 16.7     | 3.5      | 9.7      | 40.4     | 12.7     | 60.4     | 91.3     |
| Noise and vibrations            | 1.3      | 0.9      | 0.3      | 0.9      | 6.4      | 56.3     | 82.1     |
| Natural resources and biodiversity| 5.5      | 4.5      | 27.3     | 111.0    | 26.6     | 1.6      | 2.1      |
| Other domains                   | 91.9     | 106.9    | 78.3     | 87.9     | 1,642.0  | 350.9    | 2,186.2  |


It is to be noted that expenditures in R&D for environmental protection are particularly low and have decreased since 2015. This is to be related with low eco-innovation scores that Romania obtains.

24 www.gppbest.eu/?lang=en
According to the National Institute of Statistics, the total expenditures in 2018 were of 7,180.5 million lei, which corresponds to roughly €1,542 million. For comparison, Table 3.15 presents 2018 values for a selection of other European countries based on Eurostat data.

Table 3.15: Government expenditures in environmental protection, 2018, million €

<table>
<thead>
<tr>
<th>Country</th>
<th>Expenditures</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czechia</td>
<td>1,796.20</td>
<td>0.9</td>
</tr>
<tr>
<td>Estonia</td>
<td>193.40</td>
<td>0.7</td>
</tr>
<tr>
<td>France</td>
<td>24,051.00</td>
<td>1.0</td>
</tr>
<tr>
<td>Germany</td>
<td>19,933.00</td>
<td>0.6</td>
</tr>
<tr>
<td>Hungary</td>
<td>590.50</td>
<td>0.4</td>
</tr>
<tr>
<td>Poland</td>
<td>2,441.80</td>
<td>0.5</td>
</tr>
<tr>
<td>Romania</td>
<td>1,702.50</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Source: Eurostat

Public-private partnerships in support to green economy

The public-private partnerships (PPPs) are long-term contractual arrangements between a government body and a non-government partner (i.e., a private firm), usually for public service building projects. The partner is responsible for building, operating and maintaining an asset, and in exchange the government body pays regular fees to the partner.

Under the Romanian law, a PPP contract can be used for the construction, rehabilitation or extension of an asset to be part of the property of the public administration, as well as for the operation of a public service. In particular, PPP can be used for public utilities. Nevertheless, the role of PPPs in Romania is still relatively small, mainly because in the public utilities sector, the main operators remain public entities.

Romania does not measure indicator 17.17.1 (amount in US$ committed to public-private partnerships for infrastructure) of target 17.17 (encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships). In 2018, the Government approved 16 PPP projects, concerning mainly transport infrastructure construction. Two exceptions are worth mentioning: the construction of the Taruista-Lapustesti hydropower plant and that of a factory for electric means of transport.27

However, in the 2019 European Semester: Country Report, the EC found that in Romania, a move towards using more PPP contracts without reforms to improve administrative capacity could result in a high future fiscal burden for the State budget.28 Indeed, the successful implementation of these contracts requires (i) strong public institutions, (ii) strong negotiation expertise, and (iii) the ability to keep overall costs under control.

Before 2018, the European Investment Bank only counted 2 PPP contracts ever signed in Romania which related to the transport sector and had a total value of €0.039 billion29

In what concerns NGOs’ and civil society participation, there is also room for improvement. A recent report by the Conference of INGOs, following a visit to the country in 2018, strongly recommends the Government to further efforts to ensure public participation and consultation (Conference of INGOs report, 2019).

Environment Fund

The main objective of the Environment Fund is to finance and implement several environmental programmes related to reducing GHG emissions in the atmosphere, increase the carbon dioxide storage capacity and reduce the effects of water, air and soil pollution (table 3.16).

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29 https://data.eib.org/epec
Table 3.16: Expenditures of the Environment Fund Administration, 2012–2018, million lei

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total expenditures (budgeted)</strong></td>
<td>85,704.0</td>
<td>586,242.0</td>
<td>852,485.0</td>
<td>1,071.0</td>
<td>838,661.0</td>
<td>565,454.0</td>
<td>1,666,204.0</td>
</tr>
<tr>
<td>EFA operating and capital costs (budgeted)</td>
<td>32,107.0</td>
<td>29,090.0</td>
<td>31,955.0</td>
<td>47,440.0</td>
<td>41,775.0</td>
<td>31,001.0</td>
<td>33,037.0</td>
</tr>
<tr>
<td>Environment Fund Budgeted</td>
<td>824,935.0</td>
<td>556,000.0</td>
<td>801,861.0</td>
<td>1,017.5</td>
<td>790,094.0</td>
<td>531,285.0</td>
<td>1,633,126.0</td>
</tr>
<tr>
<td><strong>Disbursed</strong></td>
<td>420,629.0</td>
<td>268,668.0</td>
<td>408,709.0</td>
<td>155,248.0</td>
<td>161,246.0</td>
<td>174,454.0</td>
<td>91,947.0</td>
</tr>
<tr>
<td>Water and Sanitation</td>
<td>33,047.0</td>
<td>89,022.0</td>
<td>170,023.0</td>
<td>155,248.0</td>
<td>161,246.0</td>
<td>174,454.0</td>
<td>91,947.0</td>
</tr>
<tr>
<td>Waste Management</td>
<td>2,335.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>56,259.0</td>
<td>3,197.0</td>
<td>20,546.0</td>
<td>8746.0</td>
<td>5,539.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RABLA</strong></td>
<td>153,889.0</td>
<td>94,672.0</td>
<td>141,014.0</td>
<td>167,395.0</td>
<td>193,152.0</td>
<td>261,625.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: EFA annual budget reports; EFA annual activities reports

To achieve these objectives, the Fund benefits from a budget mainly financed through ear-market environmental taxes and the selling of GHG certificates as part of the EU ETS. The Fund also benefits from allocations directly from the State budget as well as European funds (table 3.17).30 The sources of fiscal revenues as of 2019 include taxes on waste—in particular the circular economy contribution and the penalties for non-compliance of waste recycling mandates—, air pollution taxes, penalties for GHG emissions in excess of permits purchased, taxes on the import of electronic devices, batteries and accumulators, amongst others.31 Note that with the abolishment of the Environmental Stamp on used cars in 2017, the Environment Fund Administration lost a significant source of fiscal revenues.

One of the main programmes implemented by the Environment Fund is the National Car Park Renewal or RABLA Programme. It consists of a €1,500 subsidy given to people willing to buy a new, more energy efficient car. This scrappage programme is implemented at the national level. The initial subsidy can be coupled with two different eco-bonuses, based on the quantity of emissions of the new vehicle. The Programme has been constantly growing since 2005, when it was first launched. From 2012 to 2019, 265,464 used cars were scrapped, supporting the acquisition of 226,894 new more efficient vehicles. The total amount of subsidies distributed during the period 2012–2018 was around €245 million and represented 42.6 per cent of all subsidies distributed by the Environment Fund.

Table 3.17: Revenues of the Environment Fund, 2012–2018, million lei

<table>
<thead>
<tr>
<th>Revenues</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total revenues</strong></td>
<td>668,935</td>
<td>586,242</td>
<td>852,485</td>
<td>1,071,000</td>
<td>836,461</td>
<td>565,454</td>
<td>1,120,978</td>
</tr>
<tr>
<td>Fiscal revenues</td>
<td>618,353</td>
<td>570,242</td>
<td>795,468</td>
<td>1,005,000</td>
<td>831,261</td>
<td>555,337</td>
<td>400,992</td>
</tr>
<tr>
<td>Non-fiscal revenues</td>
<td>50,000</td>
<td>16,000</td>
<td>41,306</td>
<td>66,000</td>
<td>5,200</td>
<td>10,117</td>
<td>719,896</td>
</tr>
<tr>
<td>EU ETS certificates</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>714,736</td>
</tr>
<tr>
<td>Property and Interests revenues</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>5,250</td>
</tr>
<tr>
<td>EU Funds</td>
<td>979.9</td>
<td>15,711</td>
<td>11,000</td>
<td>5,200</td>
<td>7,182</td>
<td>2,935</td>
<td></td>
</tr>
</tbody>
</table>

Source: EFA annual budget reports; EFA annual activities reports

An extension of RABLA Programme, RABLA+ provides a €10,000 subsidy for the acquisition of electric or hybrid cars. From 2016 to December 2019, approximately 3,000 new electric or hybrid cars were purchased thanks to the programme. However, one should note that the electric cars charging network in the country is still underdeveloped.

Another programme aims to incentivizing the acquisition of new more efficient appliances. Households can also benefit from subsidies for investments in heating systems using renewable energy sources. This programme, also known as “Casa Verde” offers up to €1,200 for a pressurized solar panel system and €1,600 for a heat pump. Over the period 2012–2018, payments via the Casa Verde program amounted to €42 million.

30 Other sources of revenue include revenues from property, revenues from interests earned
31 A detailed list of all taxes and charges due to the Environment Fund Administration is available at www.afm.ro/informatii_publice_bvc.php
RABLA, RABLA+ and Casa Verde are also open to legal entities, whether public or private. Additionally, these entities can benefit from programmes providing funds for the closure of non-compliant municipal and industrial waste landfills, according to the provisions of the decision of the Court of Justice of the European Union pronounced in Case C 301/17. To date, 13 applications have been submitted by municipalities, out of which 8 have been already granted €9.5 million worth. The Environment Fund also provides municipalities with grants for purchasing of electric and hybrid busses and trolleybuses, \(^{32}\) for the construction of sewage treatment plants, sewage networks, water treatment plants, water distribution networks (with 231 contracts funded from 2012 to December 2019, for an approximate amount of €202 million. Moreover, municipalities, as well as enterprises, can also apply for subsidies for the installation of charging stations.

Finally, the Environment Fund has an Afforestation Programme—which, finances afforestation of degraded land, ecological reconstruction and sustainable forest management—and programmes promoting environmental research and development and environmental education and awareness.

The second EPR of Romania in its Recommendation 6.1 asked the Government to evaluate the economic and environmental effects of the car-scrapping program in order to decide whether it is really useful to continue with it. The car scrapping programme continues to be implemented, but no systematic analysis of its environmental performance was undertaken. Therefore, it can be concluded that the Recommendation 6.1 is not implemented.

Similarly, Recommendation 6.2 in the second EPR of Romania asked the then Ministry of Environment and Forests to carry out periodic auditing of the activities of the Environment Fund, its administrative procedures and technical capacities in order to ensure an effective and efficient use of its financial resources and accelerated decision-making. There is no systematic impact assessment being done on the different programs funded by the Environment Fund. Therefore, there is not much information on the contribution of these programs to the reduction of pollution and the overall goal of greening the Romanian economy. The Recommendation 6.2 was not implemented.

**Foreign direct investments**

According to the National Bank of Romania, FDIs net flows were of €5.266 million in 2018 and have been constantly increasing since 2012. The main investor countries are Germany and the Netherlands. About 7.4 per cent of the total stock of FDIs at the end of 2018 was channelled to the electricity, gas and water supply sector, and 3 per cent to the agriculture, fishery and forestry sector. \(^{33}\) However, there is no mention of whether the investments were “green” in nature.

**Foreign assistance**

For the period 2014–2020, Romania benefits from European Structural and Investment Funds (ESI Funds) of €30.8 billion, through eight national programmes. Overall, around €3 billion were allocated for areas that should help the country achieve its environmental objectives by reducing GHG emissions, improving water conservation and protecting Biodiversity (table 3.18).

<table>
<thead>
<tr>
<th>Focus area</th>
<th>EU funds</th>
<th>National funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority 4 (shift towards a low carbon economy)</td>
<td>2,343.926</td>
<td>463.718</td>
</tr>
<tr>
<td>Water efficiency</td>
<td>385.665</td>
<td>76.476</td>
</tr>
<tr>
<td>Reducing GHG and NH$_3$</td>
<td>185.672</td>
<td>36.844</td>
</tr>
<tr>
<td>Carbon conservation and sequestration</td>
<td>105.695</td>
<td>21.117</td>
</tr>
<tr>
<td>Renewable energy</td>
<td>1.787</td>
<td>0.398</td>
</tr>
</tbody>
</table>

*Source: European Commission – Cohesion funds data*

According to the EC, Romania has an investment absorption problem i.e. the country is not able to use the monies available to it. As of 2019, only 31 per cent of the funds EU allocated to Romania for the period of 2014–2020

\(^{32}\) Currently, there are two undergoing contracts with the Municipality of Bucharest and the Municipality of Braşov, amounting to €94,600,000.

\(^{33}\) [www.bnr.ro/Regular-publications-2504.aspx#ctl00_ctl00_CPH1_CPH1_14364_InkTitle](www.bnr.ro/Regular-publications-2504.aspx#ctl00_ctl00_CPH1_CPH1_14364_InkTitle)
were spent. For example, out of the 60 MW of the planned renewable energy production capacity, none was built by the end of 2018.

According to the EC Environmental Implementation Review 2019, the low level of absorption is mainly caused by: (i) final beneficiaries’ lack of capacity to prepare large investment projects; (ii) final beneficiaries’ lack of capacity to implement large investment projects; (iii) a lack of buy-in/ownership; and (iv) the excessive length of tender procedures.

The second EPR of Romania in its Recommendation 6.3 asked the Government to (a) revise national regulations regarding EU funds in order to: (i) review criteria for the selection of projects to be submitted for EU environmental funding; (ii) simplify the process of decision-making; (iii) ensure a targeted division of responsibilities between project proposal assessment, implementation and supervision in order to avoid duplication and overlapping; and (b) increase capacity, especially staff skills, for project proposal preparation at all levels. Given the low level of absorption of EU funds, not much progress has been made in this area. The country does not seem to be able mobilize and efficiently manage available EU funds and therefore, it can be concluded that Recommendation 6.3 was not implemented.

Romania also received funds from Switzerland as part of Switzerland’s contribution to EU enlargement (181 million of Swiss Francs received between 2009 and 2019). Several of the funded projects pertained to environmental protection including the change to LED public lighting in several municipalities (e.g., Arad, Brasov and Suceava), capacity building for forest owners, rehabilitation of public buildings and the promotion of electromobility.

**Development Aid**

Romania does not report on the global indicator 17.2.1 (net official development assistance, total and to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors’ gross national income (GNI)) of the target 17.2 (developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries).

In regard to aid that Romania provides to other countries, data from OECD show that between 2012 and 2018, Romania spent between 0.09 and 0.11 per cent of its GNI in development aid. The Law No. 213/2016 provides the legal basis for the development co-operation and humanitarian aid activities financed from Romanian public funds. The Ministry of Foreign Affairs coordinates the country’s development cooperation and humanitarian aid policy. In November 2016, the country’s Agency for International Development Cooperation was created under the Ministry of Foreign Affairs.

Romania provides development aid to countries such as Georgia, Republic of Moldova, Serbia, Syria, Turkey and Ukraine. The main sectors of bilateral development cooperation are governance and civil society; education, health and population, and humanitarian aid. Additionally, Romania imports goods from developing countries. Imports from developing countries represented about €15 billion in 2018 up from €8.7 billion in 2012.

### 3.5 Green markets

The Eco-Innovation Scoreboard is an indicator used by the EC to illustrate eco-innovation performance across the EU Member States. It captures the different aspects of eco-innovation by applying 16 indicators grouped into five dimensions: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency and socio-economic outcomes. The eco-innovation score for Romania has diminished since 2012 and was 66 in 2018 - which is lower than the EU-average of 100. Explaining this low score is the fact that Romania has a low resource productivity which leads to an elevated use of raw material, water and energy in production.

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Challenges remain in waste management at municipal and industrial level, with low waste recycling rates. Waste dumping is very common as well.

A report from the Eco-Innovation Observatory\(^\text{36}\) specifies that Romanian private companies are investing more in resource efficiency than in the past—and are planning to offer green products and services in the next two years (19 per cent). About 31 per cent of companies in Romania are likely to take actions to decrease waste and only 33 per cent were taking actions to save energy.

In January 2020, the Ministry of Environment, Waters and Forests counted 21 economic operators that had obtained the EU Ecolabel, which is like countries like Portugal or Slovenia. There are also 24 other ecolabels used in the country, according to Ecolabel Index. Also, Green Revolution, a Romanian NGO, has developed a Green Business Index, which evaluates Romanian companies’ environmental responsibility according to the principles of ISO 14001 and ISO 1901. The demand of enterprises willing to adopt such a label shows that there is an interest from the private sector to adopt more sustainable practices.

In the agricultural sector, the number of organic producers decreased from 15,280 in 2012 to 8,518 in 2018. However, the land surface allocated to organic farming has slightly increased from 288,261 hectares to 326,260 hectares in the same period, and so did the number of importers of organic products (Eurostat).

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**Circular economy**

While a major milestone was achieved with the adoption of the General Waste Management Plan in 2017, no integrated strategy for the circular economy was drafted in Romania. In 2017, 36 per cent of Romanian companies mentioned the complex administrative or legal procedures to be a barrier to taking up resource efficiency. This was the most mentioned difficulty in Romania and was above the EU average of 33 per cent (Flash Eurobarometer 456, 2017).

Next to the complicated regulatory framework, a major problem continues to be the lack of adequate infrastructure, for waste management. About 85 per cent of the population is covered by a proper waste collection system, and separate garbage collection is done only in exceptional cases. Industry-level waste collection systems have also been very inefficient, especially about packaging waste (chapter 10).

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### 3.6 Green jobs

In 2018, Romania adopted a National Strategy for Green Jobs 2018–2025. The strategy has three main objectives: firstly, to stimulate entrepreneurship and the creation of green jobs focusing on the highly competitive sectors identified both in the 2014–2020 National Competitiveness Strategy and in the 2014–2020 National Research, Development and Innovation Strategy, secondly to develop skills of the workforce to meet the labour demand in the sectors that can generate green jobs and lastly to strengthen the cooperation and dialogue with relevant actors and social partners in sectors with high potential for creating green jobs.

With regards to green jobs’ creation, the National Plan for Green Jobs aims at promoting employment in the economic sectors that actively contribute to a greener economy (e.g., renewable electricity production), which would support the achievement of the SDG target 8.3 (promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services).

According to Eurostat, in 2017 the environmental goods and services sector in Romania employed 147,710 people (full-time equivalent), which is around 1.7 per cent of the Romanian employed population and on the average of EU-member states (around 155,000 in 2016). According to the Eurostat SDG indicators, employment rates in Romania have increased since 2013 and rates of long-term unemployment are currently below the EU-average. However, the rate of “working poor” while decreasing, remains at high levels, at around 15 per cent of the population aged 18 and more in 2018.

3.7 Legal, policy and institutional framework for greening the economy

**Legal framework**

**Industrial emissions**

The Law No. 278/2013 stipulates measures for integrated pollution prevention and control, waste incineration, measures to limit volatile organic compound emissions, management of industrial waste and sets the limits for air, water and soil emissions. Air pollution charges are set in the GEO No. 196/2005, which also regulates other taxes to be paid to the Environment Fund Administration.

**Water pollution charges**

The Law No. 241/2006 on Water Supply and Sanitation Services, with subsequent modifications sets water pollution, and groundwater and surface water abstraction charges.

**Excise duties, motor vehicles and roads use charges, and land and property taxes**

The Law No. 227/2015 (with subsequent modifications and completions) regulates the level of excise duties, charges related to motor vehicles and the use of roads, as well as land and property taxes. The rates of the excise duties levied by Romania are revised annually to account for inflation, in accordance with the provisions of art. No. 342 paragraphs (1) – (2) and of art. 442 paragraphs (1) – (3) of the Law. The duties are paid to the state budget and collected by the National Agency for Fiscal Administration.

The implementation and collection of the charges for the use of roads is under the responsibility of the National Company for the Management of the Road Infrastructure.

Land and property taxes are considered local taxes and paid directly to municipalities.

**Oil and other mineral resources exploitation**

The Oil Law No. 238/2004 with the subsequent modifications and completions regulates oil and gas activities and royalties. The oil and gas royalties are paid by all legal entities involved in the extraction of these resources and are calculated based on the reference prices determined by the National Agency for Mineral Resources as explained above.

Other mineral resources activities and the payment of associated royalties fall within the scope of the Law No. 85/2003 and are also supervised by the National Agency for Mineral Resources. The same is true for mineral water abstraction.

**Electricity tariffs and feed-in tariffs for renewable energy sources**

The promotion of electricity production from RES is regulated by the following laws:

(i) Law No. 220/2008 for establishing the system to promote the production of energy from renewable energy sources;
(ii) Law No. 184/2018 approving the GEO No. 24/2017 on the modification and completion of the Law No. 220/2008 for establishing the system for promoting the production of energy from renewable energy sources and for modifying some normative acts. In particular, this law allows electricity producers and local authorities that own power plants from renewable sources—which benefits from support scheme promoted by green certificates or that have benefited from the support scheme and own green certificates—with installed capacities of maximum 3 MW per producer, to directly conduct negotiated contracts with end consumers for sale of electricity and/or green certificates;
(iii) Law No. 122/2015 for the approval of measures in the field of promoting the production of electricity from renewable energy sources and regarding the modification and completion of normative act. It sets
the process for accreditation of economic operators with installed capacities between 125 and 250 MW and who did not benefit from green certificates promotion system.

Several orders of the National Energy Regulatory Authority regulate the implementation of electricity production from RES including Order No. 4/2015 which regulates the issuing green certificates, Order No. 157/2018, establishing the methodology for setting the mandatory annual quota for the acquisition of green certificates, Order No. 77/2017 approving the Regulation of organization and functioning of the green certificates market, with subsequent amendments, and Order No. 52/2016 defining the methodology for the monitoring of renewables electricity support scheme promoted by green certificates.

Public procurement

The Law No. 98/2016 on Public Procurement, Law No. 99/2016 on Utilities Procurement and Law No. 100/2016 on Work and Services Concessions transpose Directives 2014/23/EU, 2014/24/EU and 2014/25/EU regulate public procurement. Additionally, the Law No. 69/2016 imposes the creation of national guidelines for GPP, which are not been established.

Public-private partnerships

The GEO No. 39/2018 regulates PPPs and repeals the provisions of the Law No. 233/2016 as amended in December 2017. While the GEO No. 39/2018 is yet to be approved through a law passed by parliament, by mid-2019 only a number of amendments had been brought through the GEO No 43/2019. Implementation norms are also expected to be issued for the new PPP legislation to be fully functional.

Institutional framework

The Ministry of Environment, Waters and Forests is responsible for the general strategic planning regarding the environment and the green economy. According to the provisions of the GD No. 579/2015 regarding the establishment of the specific responsibilities of the public authorities, the Ministry operates in all environmental areas (chapter 1). Additionally, according to the GEO No. 196/2005, the Ministry coordinates activities of the Environment Fund Administration, sets priority environmental programmes to be subsidized by the Environment Fund and approves its budget. The Environment Fund provides financial support for the implementation of projects and programmes for environmental protection.

The National Romanian Regulator for Public Services regulates tariffs for utility services (waste management, water supply, public lighting and public transport). It grants licenses to operators, sets guidelines on operations, provides template contracts and sets the general methodology for setting the tariffs. Operators then set their tariffs based on this methodology. The tariffs are then checked and approved by local authorities (councils). Each revision is also approved by local councils.

The National Energy Regulatory Authority regulates electricity and heating tariffs based on the Law No. 123/2012 of electricity and natural gas. It is also responsible for issuing, amending or withdrawing authorizations and licenses; monitoring the electricity and natural gas markets and promoting energy production from renewable energy sources and cogeneration.

The National Tax Administration Agency oversees collecting excise duties.

No governmental authority is responsible for PPP in Romania. Hence, any public entity that is a contracting authority under the Laws No. 98/2016, No. 99/2016 or No. 100/2016 may undertake PPP projects. However, the GEO No 46/2018 established that the National Office for Centralized Procurement, is responsible for finalizing (signing) the framework agreements and the administration of dynamic purchasing systems.

Romanian Waters manages water resources so that there is a full costs recovery water management (quantity and quality). Water end-users and polluters, e.g., operators of communal management, industrial economic operators, economic operators producing electricity, irrigation, aquaculture-fish farming, pay charges according to their usage and/or pollution levels.
3.8 Assessment, conclusions and recommendations

Assessment

The use of economic-incentive mechanisms for greening the economy are used in the main areas of concern such as air and water pollution and waste generation. The tax rates, however, are low and do not necessarily provide incentives for the reduction of negative externalities. In energy taxes, excise duties are applied to all energy products used for transport and heating, including electricity, coal and natural gas. Excise duty rates are at least at the EU minimum rates although a small “diesel differential” remains.

The country levies user charges for water abstraction and royalties for the extraction of minerals, oil and gas. In the area of municipal utility services, while tariffs are set in order to ensure cost recovery, waste and water companies still face operational difficulties: the infrastructure is obsolete and requires funds for maintenance and investments; available funds are not easily mobilized and absorbed which seems to reveal low capacity from responsible authorities. In the case of water, many public regional utilities still show weak operational and financial performance with high water losses and relatively low labour productivity. Although a national regulator has been in place for more than a decade, the regulatory framework with proper benchmarking and appropriate performance incentives is not enhanced. This applies to also waste management.

The potential benefits from PPPs in the provision of municipal utility services and the financing of the associated infrastructure are not yet fully explored. In the energy sector, electricity tariffs have approached cost-reflective levels and cross-subsidies from business entities to households have been reduced.

Most of the electricity market is now liberalized. The role of RES in total electricity supply has been promoted with a system of feed-in tariffs. Efforts are ongoing to improve energy efficiency with government subsidies. Environmental expenditures are financed mainly from earmarked revenue from environmental taxes and charges on motor vehicles.

The country has benefited from significant foreign financial assistance, with the EU having a leading role since 2007. Still, low institutional capacity and infrastructure development have hindered the country’s fund absorption capacity.

While green jobs and green markets have increased since 2012, some challenges to their development remain. Companies consider that product market regulations are too cumbersome with administrative procedures being long and complicated. Also, Romania still has low (green) innovation and knowledge indicators. Romania lags behind the EU in research and development and a number of indices of innovation and connectedness.

Progress on the achievement of SDG target 8.3 is supported by the adoption of the National Plan for Green Jobs aimed at promoting employment in the economic sectors that actively contribute to a greener economy. Both goals 8 and 12 through their targets 8.4 and 12.2 indicate that domestic material consumption has increased by 11.3 per cent in the period 2010–2017. However, no data are available on global indicators 8.4.1 and 12.2.1. Also, Romania does not measure the proportion of rural population living within 2 km of an all-season road to be able to complete the global indicator 9.1.1. Concerning the global indicator 9.1.2 about freight volumes by mode of transport, the shares have been relatively stable since 2012. No data are available on the global indicator 12.c.1 on the amount of fossil-fuel subsidies per unit of GDP (production and consumption). Romania does not report on the global indicator 17.2.1 and 17.17.1 of targets 17.2 and 17.17.

The implementation of the recommendations made by the second EPR of Romania has slowly progressed. Recommendation 5.1 is not implemented as the general framework for pollution taxation, as well as tax rates for air and water pollution have remained the same. This recommendation remains still valid. The Recommendation 5.2 is only partially implemented. This is explained by the lack of evidence of systematic use of impact assessment methods to evaluate the welfare and/or environmental impact of the implemented waste management policies, although efforts have been made to decrease municipal waste (waste charges and a new landfill tax). Also, more ambitious targets for recycling were set in the 2017 National Waste Management Plan. The Recommendation 5.3 is not implemented as the ANRSC methodology to define tariffs that ensures cost recovery for operators has not been revised since its adoption in 2007. The road user charges have been updated in 2018 and some values have been increased while fuel taxes have been reduced. However, no assessment on how these taxes contribute to
decreasing road transport pollution was carried out, what only partially satisfies the Recommendation 5.4. The Recommendation 5.5 is partially implemented as Romania applies excise duties on energy products, has set them at the minimal levels to comply with EU regulations and support vulnerable households via utilities’ social tariffs for vulnerable households as well as the minimum income for inclusion. Nevertheless, there is no plan to phase out regulated electricity and gas prices. As it concerns the Recommendation 5.6, it is partially implemented. The green certificates and the quotas obligations are monitored by the energy regulation agency and revised periodically, but there is no mention in the different environment-related plans and strategies of intentions to phase-out support for RES or of a concrete timetable regarding coal subsidies. The Recommendations 6.1, 6.2 and 6.3 are not implemented as there is no systematic monitoring of the implementation of different programmes, making it difficult to assess results, and the country does not efficiently manage available EU funds.

Conclusions and recommendations

Reinforce pollution abatement and resource conservation

The economic incentive mechanisms already in place do not promote an efficient use of natural resources. While economic incentive mechanisms, such as taxes, subsidies and tradable permits, are in place, Romania still faces challenges in achieving its environmental goals in particular in water and waste management and air quality protection. Hence, further actions in the area of environmental taxation are justified due to the considerable potential for increasing revenue from environmental taxes.

Recommendation 3.1:
The Government should:

(a) Revise the existing economic incentives mechanisms and adjust them to stimulate pollution abatement and resource conservation, by increasing taxes on air and water pollution, as well as waste generation, and consider using the additional revenues to increase environmental protection expenditures;

(b) Regularly implement impact assessment analyses of the existing economic incentive mechanisms, including programmes subsidized via the Environment Fund in order to adjust them accordingly.

Green Public Procurement

Green public procurement represents a potentially major instrument for environmental protection. The Law No. 69/2016 requires GPP to be implemented. However, this is currently not done due to the lack of concrete guidelines that public administration agents can follow. Incentives for private sector participation into the green economy are not strong enough.

Recommendation 3.2:
The Government should ensure that national guidelines for Green Public Procurement and the National Plan for Green Public Procurement are developed and disseminated across all public authorities, and their implementation be monitored.

Increase private sector participation in efforts to greening the economy

As at December 2019, the administrative or legal procedures were the most important barriers that companies perceive in adopting resource efficiency measures, and in general in investing in business development. Also, most Romanian companies are mainly driven by the need to comply with regulations in their environmental practices and are generally driven by cost considerations in their choices. Therefore, the private sector is not incentivised to participate in greening the economy.

Recommendation 3.3:
The Government should take steps to favour the participation of the private sector in greening efforts and should:

(a) Ensure fiscal and legislative stability in order to provide enterprises with a long-term vision of public policy and thus favour investments;

(b) Increase the support and promotion of resource efficiency measures in enterprises, in particular by investing further in education and training and facilitating access to credit;
Further promote public-private partnerships, including for the developments of platforms that support a circular economy through a value chain approach;

Expand and diversify the means through which the Environment Fund supports environment programmes to include other financial instruments in addition to grants.

R&D for greening the economy

While policies favouring circular economy initiatives and better recycling and waste management practices, for instance, are useful in decreasing material consumption while increasing resource productivity, expenditures on R&D in environmental protection remain low, reaching 0.2 per cent in 2013 and 0.004 per cent in 2018 of the government expenditures in environmental protection. This necessary condition for green technological change is not met.

Recommendation 3.4:
The Government should provide more incentives for Research and Development in green sectors and implement policies favouring employment in the Research and Development on environmental protection in order to achieve global SDG targets 8.4 and 12.2 and to decrease material consumption while increasing resource productivity by:

(a) Increasing public expenditures in Research and Development for environmental protection (e.g., from the Environment Fund);

(b) Fostering the collaboration between research organizations and industry (e.g., funding innovation clusters from the Environment Fund).

Investments in Institutional Capacity

Romania’s absorption rates for EU investment funds are very low. The country is at risk of forgoing significant amounts of money for the next funding period, which would lower its chances of achieving the environmental goals that it has set. The country has benefited from significant foreign financial assistance, with the EU having a leading role since 2007. Low institutional capacity and infrastructure development have hindered the country’s fund absorption capacity. Also, Government capacity in negotiation and monitoring PPP contracts is limited.

Recommendation 3.5:
The Government should enhance institutional coordination and administrative capacity to increase absorption rates for the EU funds and to better negotiate and monitor PPP contracts.
4.1 Environmental monitoring networks

Air

National Air Quality Monitoring Network

The National Air Quality Monitoring Network was established in 2004 and was last updated in 2018. As of 2019, the Network comprised 48 background monitoring stations. Since 2016, the number of automatic air quality monitoring stations measuring pollutants according to air protection-related directives has increased from 142 to 149 fixed stations, while the number of background monitoring stations has reduced from 58 in 2011 to 48 in 2019. In 2019, the air quality monitoring network covered 13 agglomerations. Despite the increase in the air quality monitoring equipment, this constitutes only a modest increase compared to the number of technically outdated and obsolete monitoring stations, with some of them older than 12 or 15 years.

Currently, the air quality monitored parameters include sulfur dioxide, nitrogen oxides, carbon monoxide, ozone, BTEX (benzene, toluene, ethyl benzene, xylene), particulate matter (PM), ammonia, lead, and meteorological parameters. Not all stations monitor all these parameters, though. Since 2016, out of seven new automatic air quality monitoring stations only one monitoring station located in Râmnicu Sărat has instruments to monitor BTEX. Since 2016, four new automatic air quality stations for monitoring PM$_{2.5}$ concentrations have been installed.

The monitoring stations collect data on air quality which then are sent to the local air quality database located in the Local Environmental Protection Agencies (LEPAs), automatically via GSM transmission. At the same time, all data from the station are sent to the public website: www.calitateaer.ro. Data are validated daily by the local agency and transmitted with a “flag” (indicator of status of the data) to the central database at the National Reference Laboratory for Air Quality located in NEPA. Data are also certified annually by the NEPA’s Air Quality Assessment Centre. NEPA reports yearly air quality data to the EC.

In 2015, the Ministry of Environment, Waters and Forests began a multi-year programme covering activities for the development and optimization of the National Air Quality Monitoring Network. This programme provides maintenance activities for monitoring and calibration equipment and has been periodically implemented depending on the allocated budget. New equipment was provided to improve the Network, including the extension of sampling points for the continuous measurement of some parameters and the replacement of obsolete equipment. As the programme is still ongoing, more of the technically outdated equipment is still planned to be replaced, and new measuring points are planned to be implemented and their maintenance is expected to be continued.

Despite the introduction of maintenance activities above, the EC has raised concerns that Romania does not have a functioning network for measuring air quality. On 25 July 2019, the Commission urged Romania to address systemic failure in monitoring pollution by sending a letter of formal notice to Romania, urging its authorities to address a systemic failure to monitor air pollution as required by EU legislation on ambient air quality (Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air and Air Quality Directive). According to the EC infringement package (2019), despite Romania’s efforts to improve its air quality monitoring network, many gaps remained concerning the appropriate number and type of air quality sampling points. These shortcomings amount to a systemic failure to comply with obligations to monitor air quality.
It is difficult to estimate the true extent of the air pollution problem in Romania. According to the EC Environmental Implementation Review 2019 Report, due to reporting and monitoring deficiencies the compliance situation cannot be established with certainty. The Government attempts for an effective implementation of the programme covering activities for the development and optimization of the National Air Quality Monitoring Network are severely impeded by the overall insufficient human, technical and financial capacity to ensure a comprehensive monitoring of air quality. Any plans or activities aimed at addressing existing gaps and improving the current system depend on the availability of funds mainly from international cooperation projects.

There are 20 monitoring stations along Romania’s borders located at Siret, Ungheni, Huşi, Isaceea, Mangalia, Călăraşi, Călăraşi, Modelu, Giurgiu, Giurgiu, Branistea, Turnu Măgurele, Turnu Măgurele, Zimnicea, Calafat, Drobeta Turnu-Severin, Moldova Nouă, Moraviţa, Nădlac and Carei. The three EMEP stations for long-range air pollutant transport monitoring, are located Fundata, Semenic and Poiana Stampei.

**Others**

In response to structural shortcomings that have been identified in the air quality data measured by the National Air Quality Monitoring Network, two independent air quality monitoring networks have been established, with first network becoming operational on 1 October 2018, monitoring air quality in Bucharest and the nearby city of Ploiesti.

A total of 15 air quality sensors are recording the level of pollutants in the air, the data being available at Airly.eu/map/en/ or in the Airly mobile app: 14 of the 15 sensors are installed in the capital, reporting the PM$_{10}$ and PM$_{2.5}$ air quality indices. The sensors also register the temperature, air humidity and atmospheric pressure. Based on this information, the app can predict the times when the level of pollution is low, and walking, cycling, or jogging is recommended. At the same time, the app also keeps a history of recorded values. Thus, users can avoid certain zones or hourly intervals when the level of pollution is high.

According to Romania Insider, a second private network that monitors air quality in Bucharest was launched on 12 December 2019. As at December 2019, the airlive.ro platform measured air quality parameters in various locations in Bucharest through a network of 10 sensors but aims to reach a network of 50 sensors in 2020. As a result of the measurements made between 13 August and 3 December 2019 the network recorded 40 cases in which the average daily concentration of PM$_{10}$ exceeded the European daily limits imposed on air quality. The network is expected to also measure the concentration of PM$_{2.5}$, carbon monoxide (CO), nitrogen dioxide (NO$_2$), and sulfur dioxide (SO$_2$), and the results would be transposed into an Air Quality Index in the future. The project was launched by the Center for Durable Policies Ecopolis and the ETA2U Foundation, along with partner organizations OPTAR, 2Celsius, and the Romanian Health Observatory, and with the support of the IKEA Foundation for Urban Environment.

These independent air monitoring networks are not recognized nor managed by the Ministry of Environment, Waters and Forests.

**Water**

In Romania, the monitoring of the water status is established in accordance with the Water Framework Directive and is carried out by Romanian Waters through the 11 territorial units (Water Basin Administrations).

Water monitoring networks cover surface water (rivers, lakes, transitional, coastal, marine waters and artificial water bodies), groundwater, PAs and wastewater discharged by water users.

The National Integrated Water Monitoring System has been developed in 2015 to comply with requirements of the EU water-related directives, implementation of international and bilateral agreements, and European Environment Information and Observation Network (EIONET) reporting requirements. The System comprises the following six subsystems: rivers; lakes; transitional waters; coastal waters; groundwaters; and wastewater (monitoring the discharge of wastewater into natural receivers). The National Integrated Water Monitoring System was re-designed by updating the network and monitoring programmes.

A six-year planning cycle was introduced and considered as many water bodies as possible. It was added water
bodies for which it was not possible to apply the grouping principle and for which the assessment was made based on risk analysis, as well as the characterization of the ecological status and potential of the water bodies. Aspects related to representativeness of the monitoring sections, the number of monitoring sections or water body (related to the length of the water body), significant sources of pollution, hydrotechnical works, protected areas were considered.

The investigation environments are represented by water, sediments and biota, the quality elements, the parameters and the minimum frequency of monitoring.

**Surface water**

At the national level, approximately 935 surface water bodies (rivers, natural lakes, accumulation lakes, artificial lakes, coastal, transitional and territorial waters) are monitored annually. Surface water monitoring includes three monitoring programmes: surveillance monitoring, operational monitoring, and investigative monitoring in conformity with the Water Framework Directive.

**Surveillance monitoring programme**

At national level, 1,403 monitoring sections have been established with a monitoring programme of the qualitative elements (biological and physico-chemical), of which 782 sections also monitor hydromorphological elements for surface water bodies:

- **Rivers**: 1,242 sections in which biological, physico-chemical and hydromorphological parameters are monitored.
- **Lakes**: 158 sections, in which the biological, physico-chemical and hydromorphological parameters are monitored.
- **Territorial waters**: 3 sections, at various isobaths (20 m and 30 m) as well as at 12 nautical miles, for the purpose of assessing the chemical state.

**Operational monitoring programme**

At national level, 538 monitoring sections have been established, of which:

- **Rivers**: The network for operational monitoring of water bodies - rivers is made up of 353 sections.
- **Lakes**: The network for operational monitoring of lakes (natural, accumulating lakes and strongly modified natural lakes) consists of 149 sections.
- **Transitional waters**: The operational monitoring network for transitional waters is made up of 8 sections, covering the 2 types of transient waters: lake and marine.
- **Coastal waters**: The operational monitoring network for natural and strongly modified coastal waters consists of 28 sections. Coastal water monitoring is carried out in sections / shore monitoring stations, as well as offshore sections at 5 m, 10 m, 20 m and 12 nautical miles.

**Investigation monitoring programme**

At a national level, 174 investigative monitoring sections have been established: 157 sections on water bodies, natural, strongly modified and artificial rivers, and 17 sections on water bodies, natural lakes and accumulations. The biological, chemical and physico-chemical elements and hydromorphological elements are performed with the following minimum monitoring frequencies, as defined in the surveillance and the operational monitoring program for rivers within Romanian Waters (according to Annex V of WFD):

- For biological elements the monitoring frequency ranges from four times per year to once every three years, depending on the subsystem type;
- For hydromorphological elements the monitoring frequency is between daily and once every six years.
- For physico-chemical and chemical elements the frequency of monitoring ranges from four times per year to 12 times per year.
In order to extend the national monitoring network, it has been proposed to include 194 new monitoring sections for 184 surface water bodies. As regards the extension of the quality indicators and monitored substances, this took place with the implementation of the requirements of Directive 2013/39/EC amending the Water Framework Directive and Priority Substances Directive in the water policy area.

Romanian Waters has a monitoring and warning system set up across Romania. In case of pollution electronic notifications are sent upstream from the point of detection of pollution to help identifying and locating sources of pollution and downstream to alert the occurrence of pollution. Monitoring stations on the Danube takes samples at least once per day.

A monitoring ship carries out sampling work 2–4 times per year in the delta and on the Danube.

**Groundwater**

At a national level, about 141 bodies of groundwater are monitored annually. Groundwater monitoring is carried out taking into account all the parameters required by the Water Framework Directive, including nutrients (nitrogen, ammonium, phosphates) with the frequency of once to twice per year (all wells and springs) for the surveillance programme and twice per year for the monitoring points included in the operational monitoring programme.

Monitoring programmes of groundwater include the quantitative and physico-chemical monitoring (surveillance and operational) programmes (table 4.1):

- Quantitative monitoring: The measurement frequency of hydrostatic levels was 2, 3, 5 and 10 measurements per month. The recordings of these measurements are made both by observers and automatic stations. In the period 2011–2013, at a national level, the groundwater bodies were quantitatively monitored through 2,838 boreholes and springs.
- Physico-chemical monitoring: At a national level, as of 2019, the number of sections monitored from a qualitative point of view was 1,601 (boreholes and springs) out of which 1,101 provided surveillance programmes and 500 (boreholes and springs) in the operational programme.

The frequency of monitoring of quantitative parameters ranges from 2 per year to 120 per year for groundwater level parameter, and from 2 times per year to 12 times per year for spring flows parameter for both surveillance and operation programmes. At the same time, the physico-chemical parameters of groundwater (oxygen, Ph, conductivity, nitrates, ammonium, alkalinity, other nutrients (nitrites, orthophosphates), priority substances and priority hazardous substances, non-priority specific pollutants, and other pollutants and parameters (including major ions) are monitored with a frequency ranging from one to two times per year (surveillance programme) and two times a year (operational programme).

According to the information received from the Ministry of Environment, Waters and Forests, an extension of the quantitative monitoring network with 95 boreholes and for the chemical monitoring network with 115 boreholes have been proposed. It has been established that for the next planning cycle, all groundwater bodies should be included in the operational monitoring programme, given their vulnerability to pollution.

**Drinking water**

Romania has adopted the provisions laid down in the Drinking Water Directive and has developed detailed rules on audit monitoring and operational monitoring of drinking water. Water sampling and physical-chemical analysis are performed by Romanian Waters through its 11 River Basin Administrations laboratories and Water Management Systems laboratories – at county level - subsidiaries of River Basin Administrations.

The monitoring of the quality of drinking water is carried out by the county public health departments and the Municipality of Bucharest (Audit Monitoring) and by the producers or distributors of drinking water (Operational Monitoring), according to the provisions of the Law on the Quality of Drinking Water No. 458/2002 and of the GD No. 974/2004 for the approval of the norms of supervision, sanitary inspection and monitoring of the quality of the drinking water and of the Procedure of sanitary authorization of the production and distribution of the drinking water, with the subsequent modifications and completions.
The Audit Monitoring is carried out by the water laboratories of the Ministry of Health and the laboratories from the Public Health Institute while Operational Monitoring is carried out by the laboratories of drinking water of the producers or distributors of drinking water, the 43 regional operators, and small operators. Since 2012, the number of analyses has increased due to improvement in the laboratory equipment. In 2018, the number of analyses completed in both Audit Monitoring and Operational Monitoring in all supply zones was 1,921,078.

The monitoring system is installed in both large water zones (supplying more than 5,000 consumers/day) and in small water zones (supplying less than 5,000 consumers/day).

County public health departments, through their ionizing radiation hygiene laboratories, carry out ionizing radiation monitoring activities for drinking water and food (mixed diet and milk) according to the Recommendation 473/2000 EURATOM and for mineral water for human consumption (bottled mineral water) based on methodologies developed by the National Institute of Public Health and approved by the Ministry of Health. They also carry out monitoring programmes for radioactive substances in drinking water in accordance with the provisions of Law No. 301/2015 laying down the requirements for the protection of the health of the population with regard to radioactive substances in drinking water (No. 904/2015), which transposes Council Directive 2013/51/EURATOM laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption.

The local public health authorities also monitor the quality of public wells in rural areas to determine whether their water quality meets the minimum drinking quality requirements, particularly in localities without centralized water supply systems where most of the drinking water is abstracted from shallow underground resources.

**Bathing water**

All nationwide identified bathing waters were monitored during a four-year period (2012–2015) based on requirements the GD No. 546/2008 on the management of bathing water quality. The GD transposes the Directive 2006/7/CE concerning the management of bathing water quality and repealing the Bathing Water Directive. Several provisions have since been modified by the GD No. 389/2011. The measured parameters, measurement methods/standards applied, are those required by the Directive and implemented by the Romanian legislation: intestinal enterococci (ISO 7899-2:2002) and E. coli (ISO 9308-3:2004).

The 2018 Romania Water Diagnostic Report states that in 2016, 38 bathing sites were registered, all located on inland waters and although they are largely deemed unsatisfactory for water quality, they have not been formally rated due to lack of adequate monitoring.

The monitoring of bathing waters is carried out in 50 zones of the coastal region of the Black Sea and 1 zone in the district Tulcea County – Lake Ciuperca (interior water). Institutional capacities are stable and represented by the laboratories of Public Health Department of Constanta County and Public Health Department of Tulcea County.

**Atmospheric precipitation and snow cover**

The atmospheric precipitation monitoring network was established in 1990 and is owned by NEPA and its LEPAs. It has not been modified and currently comprises 135 monitoring stations.

The surface meteorological observation system has 159 (of which 126 are automatic) national weather stations network and the agro-meteorological network. The measured parameters include: (i) global radiation (at 34 weather stations); (ii) diffuse and net radiation (7 weather stations); (iii) effective sunshine duration (40 weather stations); and (iv) horizontal visibility and meteorological phenomena (9 weather stations).

The surface meteorological observation system measures the following data:

- Synoptic and climatological observations and measurements at all 159 stations;
- Agrometeorological observations and measurements at 55 weather stations;
- Solar global radiation observations and measurements at 35 weather stations;
• Sea parameters measurements of at 5 weather stations;
• Upper air observations and measurements at 1 weather station;
• Snow cover observations and measurements at 4 weather stations for avalanches monitoring; and
• Precipitation measurements at 67 rain gauges.

The national weather radar network provides information regarding cloud and precipitation systems (extent, vertical development, direction and speed, evolution) as well as the related severe phenomena such as hail, heavy rain, wind gusts and tornadoes.

Black Sea monitoring

Romania is a party to the Bucharest Convention on the Protection of the Black Sea Against Pollution and participates actively in monitoring programmes for observing, measuring, evaluating and analysing the risks or effects of pollution on the marine environment of the Black Sea. Under the Black Sea Commission, the countries have established the Black Sea Integrated Monitoring and Assessment Programme to facilitate monitoring, analysis and reporting. The Programme builds on established national monitoring programmes.

In the case of Romania, the National Institute for Marine Research and Development “Grigore Antipa” Constanta under the Ministry of Education and Research has the responsibility of reporting annually to the Black Sea Commission. The Institute’s monitoring network is included in the regional Black Sea Integrated Monitoring and Assessment Programme. The Institute is the focal point and member of the Advisory Groups of the Black Sea Commission for: Biodiversity, Pollution Monitoring and Assessment, Land-based Sources of Pollution, Fishery and other marine living resources, Integrated Coastal Zone Management. The Institute is the Regional Activity Centre for Fishery and other marine living resources. Each year, the Institute provides annual reports and monitoring data for the Advisory Groups of the Black Sea Commission, according to the country obligations under Bucharest Convention.

In 2014, in the framework of the revision of the Marine Monitoring Programme in accordance with the requirements of Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), the national network of stations belonging to the National Institute for Marine Research and Development “Grigore Antipa” was expanded, covering the transitional, coastal and marine waters (territorial waters and a part of the Exclusive Economic Zones). As at December 2019, the network had 45 monitoring stations, with transects reaching up to 100 m deep and 65 nautical miles from the baseline, thus providing relevant information for the 2018 Report on the ecological status of the Black Sea marine ecosystem. In addition to the national monitoring network of the Institute, there are the specific transects for the investigations on pelagic and demersal fishery resources (under the National Fisheries Data Collection Programme) and on marine litter, as well as specific monitoring areas formacrophytobenthos (shallow area of southern coastline) and coastal and marine habitats of community interest, and the permanent monitoring station Mamaia (daily observations).

Along with the expansion of the monitoring network (from 29 stations in 2009 to 45 stations in 2019), the gradual revision of the monitoring programme involved an increased number of monitored parameters, by introducing new elements in the monitoring programme, in order to meet the advanced implementation requirements of Marine Strategy Framework Directive. For example, initially the monitoring programme included physico-chemical parameters, contaminants (metals, total petroleum hydrocarbons), and some biological elements (phytoplankton, zoobenthos). Gradually, additional elements were included in the monitoring programme: extending the range of contaminants investigated in water, sediments and organisms (organochlorinated pesticides, polychlorinated biphenyls, polyaromatic hydrocarbons); total organic carbon; new biological elements (mesozooplankton, gelatinous macrozooplankton, microzooplankton, macrophyte algae, fish); and marine litter.

The National Institute for Marine Research and Development “Grigore Antipa” is responsible for managing, processing and collecting marine monitoring data for each parameter measured. Parameters monitored four times per year include nutrients (NO₃, NO₂, NH₄, N, PO₄ and P), petroleum hydrocarbons, salinity, oxygen balance parameters (per cent, mg/l), suspended solids, chlorophyll-a, total suspended solids (TSS), sediment trace metals, oil and oil products, chlorinated pesticides and other physico-chemical parameters. Trace metals are monitored once a year.
The state of the marine ecosystem is evaluated on the basis of the parameters recommended by the Marine Strategy Framework Directive and the criteria in Commission Decision (EU) 2017/848 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU:

- Physico-chemical, general and eutrophication, parameters;
- Synthetic and non-synthetic contaminants in water, sediment and biota (heavy metals, organochlororurate pesticides, polychlorinated biphenyls, total petroleum hydrocarbons, polycyclic aromatic hydrocarbons);
- Bacterial indicators;
- Quality biological parameters (phytoplankton, zooplankton, macrozoobentos, macroalgae, fish, mammals);
- Fishery resources;
- Marine litter;
- Change of shoreline, topography of emerged and submerged beach;
- Monitoring activities of noise that may affect the structure of the ecosystem.

The work of National Institute for Marine Research and Development “Grigore Antipa” is based on the Marine Strategy Framework Directive. Initial assessment of marine status has been elaborated in 2012, following the 11 Quality Descriptors of Marine Strategy Framework Directive, i.e. Biodiversity – pelagic and benthic habitats, Eutrophication, Contaminants, Marine Litter, Fishery resources. In its 2018 report, the Institute provided a better coverage of the assessment areas and introduced new parameters into the monitoring programme.

Chemical analysis of water samples, sediments and organisms is carried out by reference methods in chemical oceanography and marine pollution, agreed at regional and international level. In the laboratory of measurements and physico-chemical analyses, procedures are complied with ISO 17025:2005 requirements for ensuring and controlling data quality, internal validation of methods and estimation of measurement uncertainty. Procedures for ensuring and controlling the quality of oceanographic data are applied, including through participation in European programmes for intercomparing analytical data, such as: QUASIMEME37 and IAEA-MEL38. Also, the analysis of biological samples (plankton, bentos and fish) is done according to the methodological guidelines agreed at the Black Sea region. The specialized laboratories of the National Institute for Marine Research and Development “Grigore Antipa” have all the necessary equipment to carry out processing procedures and analysis of samples collected in sampling campaigns.

**Soil**

The status of soil monitoring has been unchanged since 2012. The National Research and Development Institute for Soil Science, Agrochemistry and Environment – ICPA Bucharest implements the National Monitoring System for Soil based on the classification and types of soil in Romania and analyses the physical and chemical parameters of soil (organic contents, pH, nitrite, nutrients, nitrogen) under the coordination of the Ministry of Agriculture and Rural Development and, in the event of accidental pollution, in cooperation with LEPAs.

**Noise and vibration**

At the level of the environmental protection authorities, no noise monitoring system is developed. No monitoring of vibrations is carried out nor are available data on environmental exposure to vibrations.

**Radioactivity**

NEPA manages and operates the National Environmental Radioactivity Surveillance Network under the coordination of the Ministry of Environment, Waters and Forests. Monitoring of radioactivity on Romanian territory is carried out by NEPA and LEPAs. NEPA operates the National Reference Radioactivity Laboratory, which provides radiation monitoring through the automatic early warning system and ensures the scientific and methodological coordination of the National Environmental Radioactivity Surveillance Network.

37 [www.quasimeme.org/](http://www.quasimeme.org/)
The status of the Network has remained unchanged since 2012. At December 2019, the Network had 38 laboratories covering the entire territory and automatic stations, i.e., the National Reference Radioactivity Laboratory, as coordinator of the Network, and 37 local laboratories, named Environmental Radioactivity Surveillance Stations. The National Reference Radioactivity Laboratory is responsible for daily collection, verifying, validating and reporting environmental radioactivity monitoring data from the Network to the national competent authorities and to EC though the European Radiological Data Exchange Platform managed by the Joint Research Centre of the EC. In addition, NEPA is responsible for radioactivity country report to EC in REM DB\(^39\). This database contains also data reported from the Ministry of Health. The local laboratories and automatic stations operate under LEPAs. The 37 local laboratories perform gross beta analyses for air (atmospheric aerosols, total deposition (dry and wet, daily)), surface water, spontaneous vegetation and uncultivated soil. Daily precipitation and surface water samples are also measured by beta spectrometry, using liquid scintillation counting method, after they were monthly cumulated. All sample type are measured by gamma spectrometry, as monthly accumulated samples.

The automatic National Environmental Radioactivity Surveillance Network stations, monitoring the gamma dose rate all over the country and particularly at locations close to nuclear power plants, are located as follows:

- 31 automatic gamma dose rate monitoring stations in the influencing areas of the Cernavoda NPP, covering Constanța County, Calarasi County and Ialomița County;
- 15 automatic gamma dose rate monitoring stations in the influencing areas of the Kozloduy NPP, on the Romanian territory, in Dolj County;
- 40 automatic gamma dose rate monitoring stations covering the rest of the national territory.

Since 2012, no automatic monitoring of water radioactivity has taken place due to the destruction by natural disasters of the five automatic stations for monitoring radioactivity in water, instead monitoring is carried out daily by laboratory methods.

Since 2012, the automatic gamma dose rate data have become available to public in near real time, on NEPA’s website.

**Biodiversity**

The National Strategy and Action plan for Biodiversity Conservation 2014–2020 draws attentions to the lack of national system of monitoring the conservation state of the wild species and natural habitats of community interest, system which would serve as the basis for the reports which Romania will submit to the EC on the implementation of community provisions in the field as well as to biodiversity-related MEA.

Although a system for biodiversity monitoring has not been established, some wild species and habitats are included in programmes and research projects undertaken by universities, museums, research institutes and NGOs. The ministry in charge of environment has carried out monitoring of some flora and fauna and bird populations with knowledge of where they are appearing so that they can begin to understand where challenges may occur. However, the ministry in charge of the environment has already reported to European Commission under article 12 on Birds Directive and article 17 on Habitats Directive. Most data reporting activities under biodiversity-related MEAs obligations and under nationally designated areas being carried out on project basis and/or dependent on international projects.

**Forests**

The National Forest Inventory is carried out every five years and is based on a 4x4 m systematic grid covering the entire country. The National Forest Inventory website publishes the results. It is noteworthy that the National Forest Inventory is a tool that provides statistical information regarding the development, area and structure of the nation’s forests. Moreover, the National Forest Inventory is based on a processing of reported data and does not represent a census of all trees in Romania.

\(^{39}\) https://rem.jrc.ec.europa.eu/
In November 2019, the Government pledged financial and logistic resources in order to conduct the third cycle of the National Forest Inventory and a budget allocation for the purchase of satellite maps to further develop the work of the satellite traceability system.

**Waste**

NEPA collects data on waste management annually. Data collection formats are specific to each type of activity, e.g., waste generation, waste collection, municipal waste collection and waste treatment, respectively to each waste stream: i.e., packaging waste, electrical and electronic equipment waste, waste batteries, end-of-life vehicles. The operators that ensure the collection and treatment of municipal waste report to the local public administrations according to the specific contractual provisions. NEPA do not receive information from other entities that collect data on waste, such as NGOs and academia. It is assumed that these activities are carried out occasionally, within some projects.

The collected data are validated and subsequently processed both for the purpose of reporting to Eurostat (including according to Regulation 2150/2002 regarding waste statistics) and Directorate-General for Environment, as well as to answer other enquiries. The information can also be found in the annual report on the state of the environment and in other materials published on the NEPA website on the Waste section.

**Seismic activity**

According to the SDS 2030, Romania has networks of geophysical sensors for the monitoring of seismic activity that send real-time data back to the National Institute for Earth Physics, the National Data Centre in Măgurele, and the Data Acquisition Centre of the Seismic Observatory in Eforie Nord Dobrogea.

This network is comprised of the Network of Seismic Observatories and Seismic Stations, Global Navigation Satellite Systems Stations, magnetic field sensors and an infrasound network. The data provided by the networks of geophysical sensors are constantly monitored by staff at the National Institute for Earth Physics. These data are used for the purposes of research, national security and civil defence.

**4.2 Analytical laboratories**

**Air and environmental radioactivity**

There are 42 operational laboratories equipped with the necessary equipment for air quality analysis and 19 mobile monitoring laboratories. Out of 42 operational laboratories, 41 are in LEPAs. The National Reference Laboratory for Air Quality under NEPA received accreditation ISO 17025 on general requirements for the competences of testing and calibrating laboratories, by RENAR in September 2011. The local 41 laboratories located in LEPAs are not accredited by RENAR, but all of them had implemented the quality policy according the ISO 17025 which can be proved with the Quality Manual and Procedures (general, specific, operational). The same management system is being implemented in NEPA’s and LEPAs’ laboratories. In essence, the only difference between NEPA's and LEPAs' laboratories are that local laboratories do not possess accreditation certificate from RENAR as they are not obliged to do so by law, while the National Reference Laboratory for Air Quality is mandated by law to have RENAR accreditation for the analyses that it performs. Because in Romania, accreditation is a voluntary act, LEPAs’ laboratories do not apply for accreditation due to financial reasons.

The National Reference Radioactivity Laboratory under NEPA and three mobile monitoring laboratories support the National Environmental Radioactivity Surveillance Network and are under NEPA, in Bucharest, Environmental Radioactivity Surveillance Station Cernavoda, and Environmental Radioactivity Surveillance Station Bechet.

The two national reference laboratories under NEPA send specific laboratory procedures to LEPAs’ laboratories. The laboratories under LEPAs implemented the same quality manual and follow general and specific procedures as NEPA’s laboratories, maintaining in this way a unity in the performed analyses. NEPA's national reference laboratories perform training courses for LEPAs' laboratories, as well as proficiency tests, in order to ensure the quality of the results reported by LEPAs. Local experts apply internationally agreed methodology. Since 2012,
the equipment of NEPA’s reference laboratories has not been changed, while the staff capacity has been reduced by at least 30 per cent.

The air quality and environmental radioactivity networks, including the National Reference Laboratories and local laboratories face challenges related to insufficient funding and staff for servicing, updating and calibrating monitoring and calibration equipment. In the past seven years, the equipment of NEPA’s reference laboratories has not been changed, while the staff capacity has been reduced. Furthermore, the lack of staff able to operate the equipment can affect the prompt response to an emergency, as well as the timely response to the current activities.

**Water**

One national laboratory, five regional laboratories with high-performance analytical equipment located in Bucharest, Râmnicu Valcea, Bacau, Cluj and Constanţa, and forty-one local laboratories with equipment for general physico-chemical parameters operate under Romanian Waters. Two laboratories are involved in the monitoring of transitional, coastal and marine waters: Dobrogea–Litoral Water Basin Administration and the National Institute for Marine Research and Development “Grigore Antipa”.

Public well waters are analysed in the laboratories of county public health departments once a year. Individual wells water quality is analysed upon a request from the consumer.

The Ministry of Health posts at [www.ms.ro](http://www.ms.ro) the list of laboratories conducting the official control of drinking water. All the laboratories that make drinking water analyses must be either in the National Register of laboratories or have measurement methods accredited by RENAR. However, since 2012, there was a concern regarding the condition of the laboratory equipment in the laboratories of the producers or distributors of drinking water and in the laboratories form the network of the Ministry of Health.

4.3 Availability of information on environment and sustainable development

**Data reporting by enterprises**

The Law on Industrial Emissions No. 278/2013 provides general framework for the authorization, operation, monitoring and environmental inspection of installations and activities in important sectors of the economy. The MO No. 818/2003 for the Approval of the Procedure for Issuing the Integrated Environmental Permit establishes the mandatory monitoring method for pollutant emissions, which includes the methodology of measurement, frequency and evaluation procedure and the obligation to provide the authorities with the results of self-monitoring at least once a year.

The base for the establishment of the conditions of the integrated environmental permit are the Conclusions on the BAT Conclusions approved by Implementing Decisions issued by the EC. These BAT Conclusions also contain monitoring conditions for the relevant pollutants, in the fields of activity set out in the Annex 1 of the Law on Industrial Emissions. The 2018 JRC Reference Report on Monitoring of Emissions to Air and Water from IED Installations of the Joint Research Centre provides practical guidance for the application of the BAT conclusions on monitoring.

As of December 2019, 70 combustion plants and 31 incineration and co-incineration plants subject of the Law No. 278/2013 carry out continuous monitoring of specific pollutants. The operators of the installations that carry out activities set out in the Annex 1 of the Law No. 278/2013 submit annual environmental reports containing data on their operations and annual emissions of pollutants to environmental authorities to LEPA, Romanian Waters and, as applicable, the Environment Fund Administration. In the case of air quality monitoring, some operators are required to monitor their own air quality indicators, but at the NEPA level there is no register of them.

The current level of environmental reporting by Romanian registered companies is still very low. In fact, some enterprises do not submit information to LEPAAs, even though they have the raw data available. As at December 2019, the information and data reported in corporate environmental reports are generally incomplete and largely irrelevant for public. This leads to the conclusion that the Recommendation 3.1 made in the second EPR of Romania in 2012 asking the then Ministry of Environment and Forests to strengthen compliance of enterprises,
in particular of registered companies, with their environmental self-monitoring and reporting obligations, and to link self-monitoring data submitted to by enterprises with data collected by national monitoring programmes, has partially implemented.

**Corporate Social Responsibility**

Romania’s efforts regarding implementation of the corporate social responsibility (CSR) principles, including in support to achieving the SDG target 12.6 (Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle), an important step ahead for CSR evolution was made through the implementation of the National Strategy to Promote Social Responsibility 2011–2016. Furthermore, starting from 2017, Romanian companies with more than 500 employees are required to elaborate sustainability reports each year to show the environmental impact of their actions upon the sustainable development of the community in which they are located.

As at December 2019, Romania had not established a national indicator to be able to report on the global indicator 12.6.1 (number of companies publishing sustainability reports). Romania does not have a mechanism in place for data collection on the number of CSR or sustainability reports published by the companies. Although the SDS 2030 contains aspirations to “encourage companies, especially large and transnational companies, to adopt sustainable practices and integrate sustainability data into their reporting cycle”, the strategy provides no information on the current status of CSR initiatives in the country.

By 2019, 28 companies with over 500 employees, submitted non-financial reports on Directive 2014/95/EU amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, to the Sustainability Disclosure Database⁴⁰, covering the period 2015–2017. In total, there are 103 CSR reports published for the period 1999–2020. The top reporting sectors include energy, financial services, retailers, and telecommunications.

The review of the content of the published reports suggest that Romanian companies provide only general information regarding their environmental impact, information which is often incomplete and irrelevant to the population. The numerous CSR initiatives at country level still lack coordination while a lack of the investors' sophistication creates impediment to determine CSR to become a strategic tool for sustainable development.

**Environmental statistical data**

The National Institute of Statistics publishes annually publications on:

- Environment Economic Account which contains related statistical data;
- Environment Statistics Series – Environment Protection Expenditure which comprises statistical data on total expenditure for environment protection, investments, expenditure for environment protection, subsidies and transfers;
- Environment Statistics - Water Distribution and Wastewater Disposal which contains statistical data on the volume of water supplied to consumers; industrial wastewater and residual water volume generated and quantities of pollutants, and the population served by the public water supply, the inhabitants of the dwellings connected to sewerage and wastewater treatment systems.

All environmental statistics produced by the Institute are made publicly available online on its website both in English and Romanian. While online statistical data are easily accessible via links provided on the website, in some cases, data are outdated, and the Environmental Accounts Publication is not available free of charge. However, both hinder open access to the environmental data.

**Databases**

**Air pollutants emission inventory**

Romania prepares, maintains and reports on a yearly basis the national emissions inventory and the inventory time series, according to the reporting obligations under the ECE Convention on Long-Range Transboundary Air Pollution and Directive 2016/2284, amending Directive 2003/35/EC and repealing Directive 2001/81/EC.

NEPA and LEPAs collect data from the operators and other providers, e.g. city halls or transport authorities, with a view of compilation of the annual inventories of atmospheric emissions at the county level and national levels. The inventory is delivered to the Ministry of Environment, Waters and Forests which performs the final check and submits the files to the EC (Directorate General Environment) and to ECE by uploading to EIONET/Central Data Repository.

The inventory is accompanied by the Informative Inventory Report (IIR)\(^{41}\), describing the data and methods used for the compilation of the inventory and presenting the trends of air emissions and the explanations on emissions sources. This reporting obligation is an EIONET core data flow and the delivery process is managed by EEA. Data and reports are available to both public authorities and to general public on EEA/EIONET/Central Data Repository webpage and on NEPA webpage\(^{42}\) as link to the main repository. Data for the period 1990–2018 were submitted on 13 March 2020\(^{43}\).

The compilation of the annual national emission inventory of air emissions requires various sources of data, including Eurostat, national statistics and data directly collected from operators and from other stakeholders. The bottom-up collection of activity data and the calculation of the correspondent emissions is part of the Environmental Integrated System, where one module is dedicated to this scope. The collection of data in this e-system started in 2013, with full capacity established in 2016. Data regarding production, fuel consumption, technologies and parameters are introduced by users in the database, validated by LEPAs and verified by NEPA. Data are used by LEPAs and NEPA for various reports, projects and estimations, including compilation of the national emissions inventory. Availability to the general public of input data is limited, due to confidentiality clauses related to economic data of companies.

Air emissions values and trends are available to the general public in the annual emissions inventory reports and in the annual reports on state of the environment.

**National Air Quality Monitoring System**

There is one central (Bucharest based server) database for Air Quality Monitoring data. The air quality data from all 149 monitoring stations are transmitted to the central server and are available to the public in near real time (hourly averages for the last hour), through the web page [www.calitateaer.ro](http://www.calitateaer.ro) and can be exported as excel files with time-series from 2007 and up to February 2020. In addition, data are available on public display panels located in major cities and information points located in the city halls. Data are transmitted online by the sensors of the stations (the raw data). These are practically validated automatically (by software). At the data centres of LEPAs, the specialists manually validate/invalidate all these data. At NEPA, the validated data are certified, on quarterly basis. There is an internal procedure for data validation and one for data ratification. These data can be accessed by the interested public, as well as by specialists, and NEPA/AQ Assessment Centre in order to carry out Romania's reporting obligations to the ECE Convention on Long-Range Transboundary Air Pollution and Directive 2016/2284. Available time series span from 2007 up to 2018.


\(^{42}\) [http://anpm.ro/inventare-emisii-poluanti-in-atmosfera/-/asset_publisher/m39YwLQRDFpW/content/inventar-national-de-emisii-de-poluanti-atmosferici%3Fp_id%3D101_INSTANCE_m39YwLQRDFpW_redire](http://anpm.ro/inventare-emisii-poluanti-in-atmosfera/-/asset_publisher/m39YwLQRDFpW/content/inventar-national-de-emisii-de-poluanti-atmosferici%3Fp_id%3D101_INSTANCE_m39YwLQRDFpW_redire)

Combustion plants inventory

From 2014, the operators of the combustion plants use the Environmental Integrated System to report data requested under the Law No. 278/2013. The Environmental Integrated System includes the online reporting system for economic operators (https://raportare.anpm.ro), as well as the validation of the reports by the persons responsible within the county agencies for environmental protection. To date, the database with combustion plants contains information for the period 2014–2018. The combustion plant database has no interconnections or data exchange protocols with international databases.

National Greenhouse Gas Inventory

The database is structured around the Common Reporting Format (CRF) categories structure as it was defined and agreed as part of the United Nations Framework Convention on Climate Change (UNFCCC) reporting Guidelines for the National Greenhouse Gas Inventory of Annex I Parties to the UNFCCC. The database comprises data and information on activity data, emission/removal factors and emissions and removals and other associated data and information.

Data and information were collected from public and private institutions in case of activity data, from methodologies associated to the Guidelines (default values) or from national studies in case of emission/removal factors, while the emissions/removals data are generated through estimation by NEPA and other partners having this responsibility.

Depending on specific legal provisions in relation to the Inventory, data and information are in general available for the period baseline year (in case of Romania being 1989) and year x-2, x being the year in which the Inventory is officially submitted (chapter 7). Data and information are fed into the database using a dedicated software, CRF Reporter, which is used for the preparation and official submission of the inventory, as part of the inventory preparation cycle. The team involved in the preparation of the inventory has access in the first instance to the data and information in the database.

Data and information from the database are submitted by Romania to the UNFCCC Secretariat, EC and EEA.

Marine species and habitats database

Within the framework of the project “Monitoring of species and habitats of community interest based on article 17 of the Habitats Directive” at the level of National Institute for Marine Research and Development “Grigore Antipa”, a spatial database of geodatabase type was created with the results of monitoring activity for marine species and coastal and marine habitats of community interest. The database has been integrated into the national monitoring system “SIMSHAB” for species and habitats. Information and spatial data on the monitoring of marine species and habitats are the basis of the national report as provided for in the Habitats Directive and the implementation of the Natura 2000 network at national level.

Biodiversity database

According to the Fifth National Report for Romania to the Convention of Biological Diversity (2014), the first national assessment of conservation status of species and habitats of EU interest, which provides a comprehensive database of wild fauna and flora in Romania (including distribution and range maps and status of conservation) has been completed.

Under INSPIRE portal, a spatial data set represents the most complete and detailed official data set of the boundaries of the protected natural areas in Romania reported by the ministry responsible for environmental protection. As at April 2020, the spatial data set contains all 1,550 protected natural areas currently designated on the national terrestrial and marine territory, respectively: The spatial data set contains the boundaries of the

44 http://biodiversitate.mmediu.ro/
45 https://inspire-geoportal.ec.europa.eu/download_details.html?view=downloadDetails&resourceId=%2FINSPiRE-7edbed58-ddbc-11e4-b469-52540004b857_20200416-082302%2Fservices%2F1%2FPullResults%2F21-40%2Fdatasets%2F1&expandedSection=metadata
protected natural areas established through implementation of the project “Making spatial data sets according to the Directive 2007/2/EC establishing an Infrastructure for Spatial Information in the European Community (INSPIRE Directive) technical specifications for the protected natural areas, including Natura2000 sites, taking into account the optimization of their management facilities”. The project was carried out between March 2014–November 2015. Furthermore, the spatial data set contains the boundaries of the Sites of Community Importance listed in the Annexes No. 1 and 2 of the Order of the Minister of the Environment, Waters and Forests No. 46/2016 and realized within the project “Strengthening the Natura 2000 network”. The project was implemented between 2015–February 2016 by the National Institute for Development Research of the Danube Delta and the National Institute for Research and Development in Forestry “Marin Drăcea”.

According to the National Biodiversity Strategy and Action Plan (NBSAP) (v.3)\(^{46}\), despite existing databases for biodiversity, there is no coordination point for data integration and information management in Romania. The major difficulties are related to insufficient staff and reorganization of environmental agencies.

**Pollutant Release and Transfer Registers**

The national Pollutant Release and Transfer Registers (PRTR) is part of the Environmental Integrated System. It complies with the European requirements and allows the accountability of the economic agents that operate the industrial installations, and their awareness regarding the environmental obligations. The PRTR also features web site\(^{47}\), online reporting dedicated to operators\(^{48}\), validation tools, and granting access and other institutions involved in validation.

**Indicators and information for sustainable development goals**

The National Institute of Statistics maintains a publicly available database “Sustainable Development Indicators in Romania (SDIR)” \(^{49}\) in Romanian and in English. The database includes indicators, which are pursuing the objectives and ways of action established by the National Strategy for Sustainable Development on the horizon of 2013, 2020 and 2030. The set of indicators has a three-level hierarchy: (1) main indicators; (2) complementary indicators, used to monitor and review sustainable development programmes; and (3) progress indicators of the Strategy covering the range of policies it generates, including those not covered by the EU strategy. SDIR is harmonized and consistent with the indicators used in the EU. SDIR includes 103 indicators, with data series; available in the national statistical system since 2000, ranked as it follows: level 1 (19 indicators), level 2 (37) and level 3 (47). The database will be updated and supplemented with other indicators as they will be developed and made available.

Romania is also reporting on SDG indicators to Eurostat which is called to regularly monitor progress towards the SDGs in an EU context\(^{50}\).

**Implementation of Shared Environmental Information System principles**

Romania does not have a separate policy or a strategy for the implementation of Shared Environmental Information System (SEIS) principles. Instead, Romania concentrated on: (i) implementation of the INSPIRE Directive; (ii) development of the Environmental Integrated System; and (iii) use data from Copernicus for different projects, e.g. a project on the Bathing Water Quality Monitoring in the Black Sea.

NEPA manages environmental data through the Environmental Integrated System. The System represents the single point of online interaction of the public with NEPA and LEPAs. The data sources also include online submissions based on the reporting obligations of the physical and legal persons and the primary database related to the gamma dose rate automatic monitoring stations.

\(^{47}\) http://prtr.anpm.ro/
\(^{48}\) https://raportare.anpm.ro
\(^{50}\) https://ec.europa.eu/eurostat/web/sdi/overview
As at December 2019, some issues in connection with the hardware for the database had been reported as the current licence covers only software which impede the effective work of the Environmental Integrated System.

NEPA maintains a dedicated national environmental portal\(^{51}\) which has a viewing service. This portal provides access to legal documentation but offers little in terms of monitoring data or historical datasets.

**Environmental reporting and publication of environmental data**

Reporting of the national air emissions inventories (annually reporting), emissions projections (every two years), gridded emissions data and large point sources (every four years) are requested under the Convention on Long-range Transboundary Air Pollution and under the Directive 2016/2284. Data and reports are available to both public authorities and to general public on EEA/EIONET/Central Data Repository webpage and on NEPA webpage as link to the main repository.

The national emissions projection, gridded emissions data and large point sources are developed by the Ministry of Environment, Waters and Forests by study performed through public procurement. Data and reports are available to both public authorities and to general public on EEA/EIONET/Central Data Repository webpage.

The INSPIRE geoportal is the central European access point to the data provided by EU Member States and several EFTA countries under the INSPIRE Directive. There is no link between the INSPIRE portal and the environmental portal. According to the EC Country Fiches Report (2016), the necessary data-sharing policies allowing access and use of spatial data by national administrations, other Member States’ administrations and EU institutions without procedural obstacles are available but not yet fully implemented. The findings of the Fiches Report (2016) conclude that monitoring reports issued by Romania and the spatial information that Romania has published on the INSPIRE geoportal indicate that not all spatial information needed for the evaluation and implementation of EU environmental law has been made available or is accessible. Although Romanian public authorities are obliged to share spatial data free of charge between public administrations, lack of resources, knowledge and collaboration has delayed the implementation.

All air quality monitoring data are available on the website: [www.calitateaer.ro](http://www.calitateaer.ro). Those data are used for local daily public information bulletins, that are published on LEPA’s websites and for the national air quality bulletins, published on NEPA’s website: [www.anpm.ro](http://www.anpm.ro).

Although air quality monitoring data are available on the website, data selection and report generation prior to data being exported as excel files is a rather complex process and is not very user-friendly.

The reported information is included in the National PRTR Register and available to the public two months after the deadline for reporting to the EU Member States is established, according to the provisions of the E-PRTR Regulation (e.g. As at April 2020, data for 2017 were available). So far, both the European E-PRTR and the national PRTR Registry\(^{52}\) contain information for the period 2007–2017.

Guidance document on reporting under the Drinking Water Directive forms the basis for reporting annual data from the 42 county public health departments, which publish annually reports on the status of drinking water quality on their respective websites. Data are collected from the stakeholders and from the drinking water laboratories from the network of the Ministry of Health. The National Centre for Risk Monitoring in the Community Environment subordinated to the National Institute of Public Health compiles and publishes the national reports of drinking water quality\(^{53}\). Reports are sent to the EC every three years. The monitoring results are reported to EC by using the EIONET portal. As at December 2019, the report with results for the period 2017–2019 is being prepared. The Centre also publishes annual report on Health and Environment.

The National Institute of Public Health quarterly collects and processes the results of monitoring activities of the ionizing radiation for drinking water and food (mixed diet and milk) and of ionizing radiation for mineral water for human consumption (bottled mineral water) and reports annually to the EC through NEPA and to the Ministry

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\(^{51}\) [http://atlas.anpm.ro/atlas](http://atlas.anpm.ro/atlas)

\(^{52}\) [http://prtr.anpm.ro](http://prtr.anpm.ro)

\(^{53}\) [www.insp.gov.ro/cnmrmc](http://www.insp.gov.ro/cnmrmc)
of Health, respectively. The Institute collects annually the results of monitoring activities of radioactive substances in drinking water which are then included in the annual report published on its website.

The Ministry of Health posts on its website a report on quality of bathing water and the calendar for sampling and analysis of bathing waters before the beginning of the season. Detailed information on Romania’s bathing waters is available from a national web portal and via an interactive map viewer designed and hosted by the EEA.

**State-of-the-Environment reports and environmental indicators**

In Romania, State-of-the-Environment reports are drawn up annually at national and county level, in Romanian and English languages, and are based on the EEA’s core set of indicators. As at December 2019, the last report was for the year of 2018 and available online in Romanian language. The reports at county level are posted at respective LEPAs’ websites. The reports are compiled by NEPA and approved by the Ministry of Environment, Waters and Forests. These reports present information to public authorities and population on the evolution of the quality of the environmental factors: the state of the atmosphere, the waters and the soils, the state of forests, natural habitats, flora and fauna, the state of the environment in urban settlements, the situation of noise pollution, radioactivity and waste.

Since 2016, the annual State of the environment reports focus on the environmental problems, offer assessments about the environment - scenarios on its evolution, as well as providing information on the actions that are being taken and what should or can be done for improvement of environment. For this the annual reports use core set indicators established by EEA, supplemented with other indicators, specified by the Order of the Ministry of Environment, Waters and Forests No. 618/2015 “concerning the elaboration of the Annual Report on the state of the environment”. Hence, the reports follow, as closely as possible the current European Union approach describing development of the Romanian environmental policies and the trends in this field.

NGOs reported some delays in the production of the county reports.

**State of the Marine and Coastal Environment**

The National Institute for Marine Research and Development “Grigore Antipa” reports on the State of the Marine and Coastal Environment annually, including results of the monitoring programme and of the other scientific projects. The report is part of the yearly national state of environment report in Romania, elaborated by NEPA.

**Linkages of environmental monitoring systems with other monitoring systems**

The Romania’s national Environmental Integrated System aims at optimizing environmental data flows between relevant institutions and integrating these into a single interconnected system of interoperable databases for improved access and accurate use of environmental information by all concerned stakeholders, including government agencies and the broader public. As at April 2020, however, there is a lack of dataflow between different systems and therefore the Environmental Integrated System is not yet fully operational.

### 4.4 Legal and institutional framework

**Legal framework**

The main specific legislative acts regulating air quality monitoring are: (i) Emergency Ordinance No. 195/2005 on environmental protection, approved by Law No. 265/2006, with subsequent amendments and completions; (ii) Law No. 104/2011 on ambient air quality, with subsequent amendments; (iii) GD No. 257/2015 approving the methodology for the development of air quality plans, short-term action plans and air quality management plans; (iv) Order of the Minister of Environment, Waters and Forests No. 598/2018 for the approval of the lists of administrative-territorial units established following the inclusion in the management regimes of the areas and agglomerations listed in Annex No. 2 to the Law No. 104/2011; and (v) Order of the Minister of Environment,
Waters and Forests No. 36/2016 for the approval of the lists of administrative-territorial units drawn up following the classification in the zones for assessment of the areas and agglomerations listed in Annex No. 2 to the Law No. 104/2011.

The main specific legislative acts regulating environmental radioactivity and radioactive discharge monitoring are: (i) Emergency Ordinance No. 195/2005 on environmental protection, approved by Law No. 265/2006, with subsequent modifications and completions; (ii) Order of the Minister of Environment No. 1978/2010 on regulation of the organization and functioning of the National Environmental Radioactivity Surveillance Network; (iii) Law No. 111/1996 on the safe deployment, regulation, licensing and control of nuclear activities, republished with subsequent modifications and completions; (iv) Minister of Health, the Minister of National Education and the President of the National Commission for the Control of Nuclear Activities No. 752/3978/136/2018, published in the Romanian Official Bulletin, No. 517 of 25/06/2018 for the approval of the Norms regarding the basic requirements of radiological security; and (v) Order of the Minister of Health No. 431/2004 regarding the organization and functioning of Ministry of Health network of ionizing radiation hygiene laboratories and departments.

The Law on Environmental Protection No. 265/2006 stipulates that all operators must have self-monitoring and monitor their emissions into air. The legal basis for the collection of environmental information with the scope of air emissions inventories compilation is the Law No. 293/2018 on the reduction of national emissions of certain atmospheric pollutants and the Law No. 104/2011, with subsequent amendments.

The MO No. 1072/2003 and Joint MO No. 242/197/2005 set up the National Integrated Water Monitoring System based on two interactive subsystems for water and soil. The MO No. 31/2006 establishes the requirements for different needs and types of monitoring programmes (surveillance, operational an investigative in special cases of accidental pollution and where the reason for any excrescences is unknown). Another key piece of legislation relevant to water monitoring is the Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources (Nitrate Directive) which was transposed into Romanian law by GD No. 964/2000 on the Approval of the Action Plan for Protection of Waters against Pollution by Nitrates from Agricultural Sources.

**Institutional framework**

The Ministry of Environment, Waters and Forests operates the National Integrated Water Monitoring System through its technical specialized body, Romanian Waters. The Ministry is also responsible for the monitoring and surveillance of environmental radioactivity throughout the national territory and is the responsible authority for coordination of the assessment and management of air quality at the national level and also has the obligation to report to the EC and to EEA the air quality data based on reports prepared by NEPA.

NEPA is responsible for the annual elaboration of the National Report on the State of Environment; the National Inventory of Atmospheric Pollutants Emissions; and the national assessments reports of air quality for areas and urban agglomerations. It is also responsible for managing the information regarding yearly monitoring of large carnivores (bear, wolf and wild cat) populations and the management of inventory regarding derogations granted to the strictly protected species (bear, wolf). In addition, NEPA is responsible for coordination, monitoring of reporting processes in the National PRTR. Overall, NEPA promotes, develops and ensures the functioning of a national system of environmental monitoring of air quality, environmental radioactivity, waste, ambient noise and vibration, by coordinating the activities of local county laboratories.

NEPA coordinates 42 LEPAs. LEPAs are in charge of environmental sampling and monitoring mainly for air and water with the water inspectorate. They have their own monitoring plan for both announced and unannounced sampling, but the NEG can ask them to take samples outside of the monitoring plan schedule. LEPAs have their own mobile monitoring equipment and laboratories.

Romanian Waters is in charge of nationwide quantitative and qualitative monitoring of all water abstraction. It manages the infrastructure for monitoring of water quality, including monitoring of species and habitats associated with water.
The Ministry of Health is responsible for monitoring of drinking water. The Ministry is also responsible, through the county public health departments for the monitoring of bathing water, for assessment of bathing water quality and for alerting and informing the public. The National Institute for Public Health is responsible for collecting drinking and bathing water quality data, annual reporting, and development of national programmes on interface of water quality and human health.

The National Institute for Marine Research and Development “Grigore Antipa” is financed through national and international research projects, various contracts and studies, including the monitoring programme that is financed by the Ministry of Environment, Waters and Forests, based on annual contracts, following public tender procedures. The Institute collaborates with institutions the Ministry of Environment, Waters and Forests. It collaborates with Water Administration “Dobrogea Litoral” Constanta on monitoring data exchange, pollution sources loads and elaboration of the common bulletin on the state of the bathing water and beaches. The National Institute has its laboratories: Ecology and Marine Biology, Marine Microbiology and Molecular Biology, Physico-Chemical Analyses (chemistry and pollutants), Ichthiofauna and other marine living resources, and Operational Oceanography. Since 2012, the staff of the Institute has been reduced.

4.5 Assessment, conclusions and recommendations

Assessment

The National Air Quality Monitoring Network was somewhat improved since 2012, with an increase in the number of stations and the replacement of instruments during periodic maintenance activities for monitoring and calibration equipment. Nonetheless, this represents a modest improvement since the number of technically outdated and obsolete monitoring stations remain substantial. Gaps remained concerning the appropriate number and type of air quality sampling points. These shortcomings amount to a systemic failure to comply with the EU obligations to monitor air quality. The Government attempts for an effective implementation of the programme covering activities for the development and optimization of the National Air Quality Monitoring Network are severely impeded by the overall insufficient human, technical and financial capacity to ensure a comprehensive monitoring of air quality. At the same time, overdependence on funding from international projects has resulted in overall fluctuating and declining monitoring capacity and infrastructure.

Similarly, environmental radioactivity network lacks financial and human resources to maintain and keep up to date the existing equipment. The wear of the equipment has become visible for which a permanent maintenance cannot be assured in an adequate manner. Furthermore, the lack of sufficient personnel capable of operating the equipment can affect the prompt response in an emergency situation, as well as the timely response to the current activities.

Since 2012, the equipment of NEPA's National Reference Laboratory for Air Quality and National Reference Radioactivity Laboratory has not been changed, while the staff capacity has been reduced by at least 30 per cent.

No noise monitoring system is in place. A system for biodiversity monitoring has not yet been established, however some wild species and habitats are included in programmes and research projects undertaken by universities, museums, research institutes and some NGOs. The relevant authorities have carried out some monitoring of flora and fauna and bird populations with knowledge of where they are appearing so that they can begin to understand where challenges may occur.

The Recommendation 3.1 made in the second EPR of Romania in 2012, is partially implemented as information and data reported in corporate environmental reports are generally incomplete and largely irrelevant for users. Furthermore, the current level of environmental reporting by Romanian listed companies is low. In fact, some enterprises do not submit information to LEPAs, although raw data are available. This recommendation remains therefore valid.

Romania has made progress in the achievement of the SDG target 12.6 through the implementation of the National Strategy to Promote Social Responsibility 2011–2016. However, Romania has not established a national indicator to be able to report on the global indicator 12.6.1. Besides, the country does not have a mechanism in place for data collection on the number of CSR or sustainability reports published by the companies and no information on the current status of CSR initiatives in the country is available.
**Conclusion and recommendations**

**Air quality monitoring**

Many air quality monitoring stations are technically outdated and obsolete, and gaps exist concerning the appropriate number and type of air quality sampling points, leading to a systemic failure to comply with obligations to monitor air pollution. The optimization of the National Air Quality Monitoring Network is severely impeded by the insufficient human, technical and financial capacity to ensure comprehensive monitoring of air quality.

**Recommendation 4.1:**

*The Government should:*

(a) Provide adequate and modern monitoring equipment, replacing outdated instruments and ensuring appropriate resources for regular maintenance and servicing of the National Air Quality Monitoring Network;

(b) Ensure that operators and relevant governmental officials dealing with environmental monitoring and information are trained regularly based on international best practices to strengthen their expertise;

(c) Work further with relevant civil society initiatives on monitoring PM10 and PM2.5 in cities towards improving national coordination of the air quality information made publicly available, and complementing the official air quality monitoring results with informative data from these networks for the purpose of public information and awareness only.

**Biodiversity monitoring and forest inventory**

Romania started working on a biodiversity monitoring system through two projects run to support the country reporting under article 17 of the EU Habitats Directive and article 12 of the EU Birds Directive. A system for biodiversity monitoring has not yet been established in practice.

The National Forest Inventory does not represent a census of all trees in Romania. In November 2019, the Government pledged financial and logistic resources in order to conduct the third cycle of the National Forest Inventory and a budget allocation for the purchase of satellite maps to further develop the work of the satellite traceability system.

**Recommendation 4.2:**

*The Government should:*

(a) Ensure stable and adequate funding of forest monitoring activities and support the development of a third national forest inventory;

(b) Set up and implement a monitoring system for biodiversity and the conservation status of natural habitats and wild species, and ensure stable and adequate funding for relevant activities.

**Noise monitoring**

There is no noise monitoring system, nor noise action plans and noise maps.

**Recommendation 4.3:**

*The Government should:*

(a) Develop a noise monitoring system;

(b) Ensure adequate capacity to measure noise systematically;

(c) Use adequate and modern noise measurement equipment and ensure appropriate resources and training for regular noise measurement.

**Laboratories**
Part I: Environmental governance and financing

The National Reference Laboratory for Air Quality and the National Reference Radioactivity Laboratory operated by NEPA both face challenges related to insufficient funding and staff. Neither laboratory is provided with sufficient and stable financial and human resources for servicing, updating and calibrating monitoring and calibration equipment. In the past seven years, the equipment of laboratories has not been changed, while the staff capacity has been reduced.

Recommendation 4.4:
The Government should ensure financial and human resources and capacity for the National Reference Laboratory for Air Quality and the National Reference Radioactivity Laboratory to adequately service, update and calibrate monitoring and laboratory equipment.

Corporate social responsibility

Romania’s efforts regarding the implementation of the corporate social responsibility (CSR) principles has seen some results. Nonetheless, Romania does not have a mechanism in place for data collection on the number of CSR or sustainability reports published by companies.

Recommendation 4.5:
The Government should:

(a) Encourage companies to adopt sustainable practices and integrate sustainability data into their reporting cycles;
(b) Establish data collection and processing mechanisms on the status of Corporate Social Responsibility in the country.

Self-monitoring by enterprises

The current level of environmental reporting by Romanian listed companies is low. In fact, some enterprises do not submit information to LEPAs. As at December 2019, the information and data reported in corporate environmental reports are generally incomplete and largely irrelevant for users. This leads to the conclusion that Recommendation 3.1 made in the second EPR of Romania in 2012 has been only partially implemented. The recommendation asked the then Ministry of Environment and Forests to strengthen the compliance of enterprises, in particular of listed companies, with their environmental self-monitoring and reporting obligations, and to link self-monitoring data submitted by enterprises with data collected by national monitoring programmes.

Recommendation 4.6:
The Government should strengthen the compliance of enterprises with their environmental self-monitoring and reporting obligations, and link self-monitoring data submitted to by enterprises with data collected by national monitoring programmes.

SDG indicators

Romania’s efforts regarding the implementation of the SDG target 12.6 (Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle) has seen some results. Nevertheless, Romania did not develop a national indicator for SDG indicator 12.6.1 (number of companies publishing sustainability reports).

Recommendation 4.7:
The Government should establish a relevant national indicator for reporting on global SDG indicator 12.6.1 to measure progress towards achievement of the 2030 Agenda for Sustainable Development.

Open access to online environmental data

All environmental statistics produced by the National Institute of Statistics are made publicly available online on the Institute’s website in both English and Romanian. However, the Environmental Accounts Publication is not available free of charge and online statistical data are not easily accessible via links provided on the National
Institute of Statistics website. These two impediments hinder open access to the environmental data. Moreover, time series data are not regularly updated.

Although Romanian public authorities must share spatial data free of charge between public administrations, the lack of resources, knowledge and collaboration have delayed implementation. Access to air quality data and the generation of air quality monitoring reports via a web interface are complicated and not user-friendly.

**Recommendation 4.8:**
The Government should ensure that environmental data are regularly updated and freely and easily accessible online to all.
Chapter 5

ENVIRONMENTAL DEMOCRACY AND EDUCATION FOR SUSTAINABLE DEVELOPMENT

5.1 Access to environmental information

Active access

All public authorities have a special space on their websites for making available information, including on environmental matters, considered of public interest, in line with the 2001 Law on Free Access to Information of Public Interest, No. 544. This space is organized in a similar manner for most public authorities. Overall, governmental institutions provide on their website information on environmental matters considered of public interest that includes mostly legislative documents regulating a given media or area and an explanation about the topic or issue addressed therein. Often the interpretation of the scope of such information excludes actual data on the state of the environment, limiting it to more descriptive information that is mostly useful for awareness raising and educational purposes. The 2020 Public Authorities Guide for Access to Environmental Information is expected to contribute to improving the process of timely and adequate provision of information on environmental matters to the public. The primary aim of the Guide is to inform and develop the capacity of civil servants involved in the procedure of responding to public requests for environmental information.

Public authorities in charge of the environment

The website (www.mmediu.ro) of the ministry in charge of the environment – the Ministry of Environment, Waters and Forests as at 14 October 2020 – which is the main public authority in charge of environmental matters, is the primary source of environmental information. The public has access to the following information provided on the website under the category of information of public interest: the ministry’s annual activity reports since 2010; annual reports on implementation of the 2001 Law on Free Access to Information of Public Interest; the National Plan of Rural Development 2014–2020 (environmental and climate change activities); contact information of staff in charge of providing information of public interest; forms and guidance for preparing petitions and for requesting information; announcements of public consultations (several per year before 2016, one in each 2016, 2018 and 2019); a list of environmental NGOs last updated in 2016; a national registry of certified experts for environmental studies; corporate governance of public enterprises (one report for 2015); information on public procurement; the ministry’s budget by financial sources (annual, since 2015) and accounting (balance sheet for 2018); ministry staff declarations of assets and interests (annual); posts vacancies; and the procedure for obtaining an audience with the minister or senior management.

In addition, the ministry provides on its website access to information in terms of descriptions, legislative documents, reports, assessments, national strategies and plans, lists of members of various commissions and committees and announcements. This information is provided for all areas of the ministry’s work such as air, water, soil, noise, waste, chemicals, climate change, forests, nature protection, hunting, spatial information (INSPIRE), access to environmental information, environmental impact assessment, environmental management systems (eco-labelling, EMAS) and sustainable development. For example, under “waste management”, access is provided to a recent study published in 2020 evaluating the guarantee system as a component of the waste management system in Romania.

Under “access to environmental information”, which is a dedicated area of the website, the text and implementation guide of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention), decisions of the Compliance Committee under the Aarhus Convention related to Romania’s compliance with the Convention and several other materials are provided, as well as the 2005 Governmental Decision on Public Access to Information on Environmental Matters

and a Public Authorities Guide for Access to Environmental Information published in 2020 in response to a recommendation by the Compliance Committee. Also, a brochure is available for the public on the procedure to accessing environmental information. An example of providing innovative access to key forest information is the development of on-line platform “Forest Inspector” (Box 5.1).

The ministry has a Facebook account (@Mediu.Romania) with 44,014 followers and 34,132 other users (liking the account) and a Twitter account (@Ro_env) with 1,174 followers. Furthermore, the ministry organizes press conferences to present new environmental information of public interest.

**Box 5.1: Engaging the public in fighting illegal logging**

In December 2016 the then Ministry of Environment launched a new on-line platform “Forest Inspector”, which was a ground-breaking approach by the Government to involve the public in addressing illegal logging and to create a unique public access to key forest information. The “Forest Inspector” platform allowed users to view ongoing and historical data about all timber transportation in Romania, including whether a logging truck is registered, the type and quantity of logs it is transporting and the exact GPS coordinates where the logs were loaded on to the truck. Previously, the Government established in 2014 a mandatory digital tracking system for trucks transporting wood (Integrated Information System of Tracking Wood Materials (SUMAL)) and set up a hotline that citizens could call to check if logging trucks seen on Romania’s roads were officially registered (resulting in some 25 per cent of all calls made since 2014 identifying illegal trucks). In July 2016 a mobile application “Forest Inspector” (Inspectorul Pădurii) based on a geographical information system was created and linked to the digital tracking system SUMAL, thereby increasing considerably the efficiency of identifying trucks transporting illegal logging, which also led to a 30 per cent increase in the number of trucks registering official transport documents.

The on-line platform and mobile application gained popularity being accessed by approximately one million users. However, a year after the launch the then Ministry of Water and Forests invoked some irregularities in the contract for the development of the app and in the timber tracking system SUMAL, resulting in the discontinuation of regular updating of the mobile app with information from SUMAL. In August 2019 the Bucharest Tribunal ruled that the then Water and Forests Ministry needed to pay 440,070 lei (almost €100,000 as per exchange rate in August 2019) to the developer of the application after the blocking of the app. As at January 2020 the website was not accessible due to works to upgrade it, including to implement the originally planned feature of linking transport documents and harvesting permits, a critical element needed to prevent the laundering of illegally cut timber.

The website of the National Environmental Protection Agency (NEPA) is the second major source of environmental information. NEPA gives access to information on similar topics to the ministry and several other issues such as biodiversity, radioactivity, biosecurity and risk management. NEPA provides access to the state-of-the-environment national reports (latest is from 2018) and to an indicator-based report for 2018. An important achievement is the development by NEPA since 2012 of an environmental integrated information system to cover various requests for information in line with the European Union directives and regulations transposed into national laws, thereby simultaneously making available the information accessible on-line for public use. At the same time, using the system requires to be registered, thereby limiting free on-line access to environmental information.

Importantly, NEPA maintains lists of authorities (contact person and details) that are information holders on environmental matters at central and county levels. For example, at local level, the 2020 list indicates 14 authorities for Brașov County and 6 authorities for Bucharest. At central level such authorities include (last updated in 2016): the Ministry of Economy, Trade and Business; the Ministry of Agriculture and Rural Development; the Ministry of Environment and Forestry; the Ministry of Information Technologies; the Ministry of Health; and the National Institute for Research and Development in Informatics.

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58 [Link to the guide](http://mmediu.ro/app/webroot/uploads/files/2020-09-14_ghid%20autorit%20pb%20pt%20acces%20pb%20la%20info%20med%202020.pdf)
59 [Link to the brochure](http://mmediu.ro/app/webroot/uploads/files/Pliant%20pentru%20public%20acces%20%20info%20med%202020.pdf)
60 The number of followers here and in other section is as at 4 October 2020.
61 [Link to the news article](https://eia-global.org/press-releases/romania-creates-revolutionary-public-access-in-new-online-wood-tracking-system )
62 [Link to the authority lists](https://lege5.ro/Gratuit/geztqobqgaza/normele-referitoare-la-provenienta-circulatia-si-comercializarea-materialelor-lemnoase-la-regimul-spatiilor-de-depozitare-a-materialelor-lemnoase-si-al-instalatiilor-de-prelucrat-lemn-rotund-precum-si)
Chapter 5: Environmental democracy and education for sustainable development

Development; the Ministry of Regional Development and Tourism; the Ministry of Transport; the Ministry of Interior; the National Directorate of Forests “Romsilva”; the National Meteorological Administration; the National Institute of Statistics; and Tulcea Delta Danube Biosphere Reserve Administration.

NEPA also maintains an updated list of what types of environmental information are available from the information holders in each county and in Bucharest. The lists contain useful information on information types (name and description) and conditions under which the information is made available to the public (on-line or upon request). An overview of requests for information received by NEPA and LEPAs in 2020 (as at August) is made available on-line.

The National Environmental Guard (www.gnm.ro) makes available on its website information of public interest and has an active Facebook account (@GardaNationaladeMediu) with 19,906 followers and 18,748 other users.

The Environment Fund Administration (www.afm.ro) provides environmental information, including of public interest, on its website.

The National Agency of Natural Protected Areas (www.ananp.gov.ro) provides environmental information, including of public interest, on its website and also has a Facebook account.

The National Meteorological Administration (www.meteoromania.ro) provides information related to weather and climate change and has a Facebook account (@anmromania) with 6,338 followers and 4,652 other users.

The Danube Delta Biosphere Reserve Authority (www.ddbra.ro) provides environmental information, including of public interest on its website and has a Facebook account (@arbdd) with 9,835 followers and 9,088 other users.

In 2010 NEPA together with the Ecological University of Bucharest and the Romanian Association for Environment 1998 have established an Aarhus Centre – Romania, located on the premises of NEPA. However, it is not clear whether the centre is still operational in 2020.

Access to legislation on environmental matters

The public can access legislative and regulatory acts, including on environmental matters, on several websites, including the website of the ministry in charge of the environment and the legal portal (http://legislatie.just.ro/) developed within the project “Implementation of the N-Lex Portal”, implemented by the Ministry of Justice in 2012–2015. The versions posted on these websites are not always updated with consolidated versions to include the latest amendments to the legal acts. The private website (https://lege5.ro/) provides access to the legal acts, judicial and other information. The original text can be accessed free of charge and the consolidated text including all amendments is accessible upon subscription for a monthly fee of 65 lei (approximately US$15 as at 5 October 2020).

Access to statistical information on environmental matters

The National Institute of Statistics (https://insse.ro/cms/ro) has a space on its website for information of public interest and provides limited access to actual environmental data. Its publications are not provided free of charge. The database for the sustainable development indicators contains actual data on several topics organized according to 13 objectives of the old National Strategy for Sustainable Development (https://insse.ro/cms/files/Web_IDD_BD_ro/index.htm). However, the data are not always up to date with datasets having timelines ranging from 2009 (for protected areas) to 2019 (for public health). The database for the sustainable development indicators works well on-line. The statistical database TEMPO (the main database) provides 17 datasets on environmental matters (chapter 4).

Mass-media sources of environmental information

Environmental information is provided on several mass-media sources (websites, magazines, newspapers), such as:

63 www.anpm.ro/informatii-de-mediu-detinute-de-autoritatitale-publice
• Ecologic magazine – the oldest (since 2004) environmental publication in Romania with monthly editions provided on a website (www.ecologic.rec.ro) and as a printed magazine;
• InfomediuEuropa magazine – an environmental magazine on-line (www.infomediu.eu) and in printed version, since 2015 on 100 per cent recycled paper;
• Green Report – on-line information related to business, legislation and education for a cleaner environment (www.green-report.ro);
• EcoMagazin – the largest independent media project with a focus on environmental protection provided on-line (www.ecomagazin.ro);
• Green Tribune newspaper – a media project for education and information of Local Public Authorities developed by the Ecopress Association in partnership with the ministry in charge of the environment, available in printed version and on Facebook.

In Romania several Radio shows focus on environmental issues, such as a one-hour “Eco Frequency (Eco Frecvența)” broadcast on National FM, running on Wednesdays at 13:00 and discussing emerging environmental concerns, and “Green Planet (Planeta Verde)” on RFI Radio, focussed on action to protect the planet and reduce pollution.

In addition, public announcements are made in online newspapers, national or local newspapers, online and sometimes on local radio during the procedures for environmental impact assessment, strategic environmental assessment and environmental permitting.

Passive access

Passive access to environmental information is enabled through procedures established by public authorities in line with the 2001 Law on Free Access to Information of Public Interest, the 2003 Law on Public Administration Decision-Making Transparency, No. 52, the 2002 Governmental Ordinance on the Regulation of the Activity of Addressing Petitions, No. 27 and the 2005 Government Decision on Public Access to Environmental Information, No. 878 and any other relevant legislation. Public authorities are expected to make every reasonable effort to ensure the information in their possession can be readily reproduced and accessed electronically at the request of the public.

The ministry in charge of the environment receives (by post, email, fax or direct letters brought to the ministry’s registration unit) petitions and requests for environmental information, registers them and acknowledges their receipt to the requestee. The response preparation is coordinated by the communication department, with the involvement of relevant technical units. The response is prepared within 10 days with a limit of 30 days for requests requiring more time to gather the information. Depending on the nature of the requested information, the response is prepared either by a unit in the ministry or it is transmitted to a subordinate institution for responding directly to the requestee. Requests that go beyond the mandate of the ministry are transmitted to the respective public authority, which then takes charge of responding to the request. The requestee is kept informed in all cases.

In 2019, the Ministry of Environment (as named then) received a total of 457 requests for information of public interest (222 requests from physical persons and 235 from legal entities), of which 149 requests were responded to within 10 days; 59, within 30 days; 9, the deadline was exceeded; and 240, transmitted within 5 days to other public authorities. Most requests (415) were handled in electronic format. Compared to 2018 (261 requests), 2017 (146 requests) and 2016 (209 requests), the number of requests for information in 2019 has more than doubled.

Before 2016, the evaluation reports on addressing requests for information of public interest had a more detailed template and were consolidated for all public authorities in charge of the environment at central and local levels. For example, in 2015 a total of 2,627 requests were received by public environmental authorities at the central level (of which 2,059 from physical persons) and 18,574 requests at local level (of which 5,065 from physical persons). At central level, 2,616 requests were answered positively, including 48 transmitted to other authorities, and 11 were rejected, including one based on exempted information grounds. At local level, 18,488 requests were answered positively, including 472 transmitted to other authorities, and 82 were rejected, including 29 based on exempted information grounds. In the same year, a total of 39 administrative complaints were addressed to public

64 www.facebook.com/pages/category/Media-News-Company/Tribuna-Verde-257734231589219/
65 The annual reports are available on the ministry website www.mmediu.ro/categorie/rapoarte-de-aplicare-a-legii-nr-544-2001/161
institutions based on the 2001 Law on Free Access to Information of Public Interest (11 at central level were rejected and 28 at local level were resolved favourably for the applicant), and a total of 9 complaints were made in court against public institutions, all at local level (5 were resolved favourably for the applicant, 3 were resolved in favour of the institution and 1 was outstanding). Also, in 2015 at the local level, the total operating costs of the department (or persons) in charge of information and public relations (consumables) amounted to 317,144 lei (US$75,964 as at 31 December 2015). Costs at central level are not available.

Petitions and requests for environmental information coming to NEPA or LEPAs are registered by units in charge of public relations; in the case of NEPA it is a service that deals with issues related to sustainable development, projects and public relations. Requests for specific information are then forwarded to the respective technical unit dealing with that information. Requests for complex broad information are processed by staff handling public relations, who coordinate the collection of information from all technical units and respond to the request. NEPA transmits to the ministry in charge of the environment an annual evaluation report of requests processed. Accordingly, in 2020 (as of August 2020) NEPA received a total of 76 (27 from Bucharest and 49 from elsewhere) written requests for information from individuals (66) and legal entities (10) and responded positively to them; 2 other requests were rejected.

At local level, EPA Braşov maintains a dedicated register for monitoring the petitions and requests received. In 2019 EPA Braşov received 80 public petitions (from individuals and groups of people), out of which 60 did not pertain to the competences of EPA and were forwarded to other public authorities. The remaining were answered and, as at December 2019, EPA did not have any administrative complaints. Also, as at December 2019, EPA did not have to use the clause of “information restricted to internal use”; but it did use the clause “information still in the drafting process”. EPA Braşov is reporting annually to NEPA on its implementation of access to information on environmental matters, while the 2005 Government Decision on Public Access to Environmental Information requires monthly reporting.

The National Environmental Guard makes available on-line its annual reports on addressing requests for information of public interest. In 2019, the Guard responded positively to 697 requests for information and negatively to 17 requests, including 7 citing the reason of non-existing information and 8 based on the legal provisions of confidential information. The majority (627) of responses were made within 10 days, while 42 were within 30 days. With some fluctuation, a general increase in the number of requests for information is observed from 407 in 2012 (380 in 2013, 477 in 2014, 614 in 2015, 516 in 2016, 616 in 2017, 585 in 2018) to 697 in 2019. The Guard indicates the lack of enough human resources to address the requests for information as a challenge.

**Charges**

Generally, the provision of environmental information in electronic format is free of charge. Photocopying information can be charged against a reasonable fee to cover the paper and printing costs. However, in practice the ministry and NEPA do not charge for printed information. Most information is provided in electronic format.

Information published in the Official Monitor newsletter (environmental legislation and regulations) is available for only 10 days on-line and after that is upon subscription. Also, certain data from the National Institute of Statistics is provided against a fee.

As at December 2019, the ministry in charge of the environment provides all the requested environmental information free of charge, including scanning or photocopying documents, and sending them by e-mail or post. Likewise, NEPA provides free of charge the environmental information requested by the public.

NGOs encounter situations in which they are asked unreasonable amounts of money for making photocopies and scanning documents of information such as forest management plans for forest areas under the contract of administration, services and security with the Retezatul Clopotiva SRL Forest District66. Reportedly, the NGO that requested these forest management plans and won in court the case to receive them, was asked to pay

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66 Forest district definition as per the Forest Code, No. 46/ 2008 - the forest unit established for the purpose of administering or providing services for the national forest fund, having the minimum area to be established as follows: a) in the plain region - 3,000 ha of forest fund; b) in the hill region - 5,000 ha of forest fund; c) in the mountain region - 7,000 ha of forest fund.
approximately €7,000 for making photocopies and scanning documents, an amount which is not affordable for an NGO.

**Limitations to access to information**

Some information of public interest on environmental matters is treated in a restrictive manner with certain documents, data and information simply not being made available on-line by the respective public authorities, including those beyond the environmental authorities, which are in possession of information on environmental matters. For instance, access to up-to-date open data on the environment (e.g., emissions into air, discharges into water, on biodiversity, protected areas and forests) and data related to green and circular economy, is limited for the public.

A challenge in ensuring full access to environmental information encountered by the environmental authorities is the lack of awareness among non-environmental authorities about the fact that the information in their possession might qualify as information on environmental matters.

Environmental authorities recognize the challenge in identifying effective mechanisms to increase the public’s awareness of its right to participate in decision-making on environmental matters to achieve more pro-active public participation. In addition, NEPA identified the need for adequate financial resources for modernising and maintaining its integrated environmental information system to support enabling access to information needed for public participation.

Public environmental authorities’ websites (or parts of them), such as the website of NEPA and of its county branches LEPAs are repeatedly not accessible for long periods of time due to technical issues, which hinders access to information, especially when needed for organizing timely participation by NGOs in public hearings, a fact confirmed by several environmental NGOs.

In addition, frequent changes in the mandate and structure of the ministry in charge of the environment, results in two websites running in parallel which is confusing for the user. For example annual reports on the state of forests in Romania (the latest is for 2017) are split across two websites: on one website are posted reports for 2016 and 2017 ([http://apepaduri.gov.ro/paduri/](http://apepaduri.gov.ro/paduri/)) and the other website provides reports from 2005 to 2015 ([www.mmediu.ro/categorie/starea-padurilor/209](http://www.mmediu.ro/categorie/starea-padurilor/209)).

Frequently, environmental NGOs are not satisfied with the quality of responses provided by the public authorities, which commonly contain a polite response to the letter without providing the requested information in full, if at all. Information on how much water was used by hydropower plants and how much they are paying for water use is also not readily provided upon request from NGOs. Discharges into water is another area of information difficult to obtain from Romanian Waters and other water basin administrations. Refusal to provide such information is usually justified by clauses of confidentiality, intellectual property or commercial secrecy.

Some requests for information on environmental matters are rejected by the public authorities (ministry in charge of the environment, NEPA, LEPAs, Water Basin Administration, etc.) or business (energy enterprises) on the grounds of confidentiality, or justifying the rejection by saying that the requested information is not of public interest. Information such as on emissions into the environment from power plants and the methodology for their calculation, amounts of priority substances discharged into rivers and forests management plans of forest areas under contract of their administration are often rejected and end up in court cases filed by the requestee, that are usually environmental NGOs (see access to justice section). Even when the court cases are won by the environmental NGOs, the concerned public authority or business is continuing to not provide the information or providing it only partially. Given that court cases in environmental matters can last some two to three years, certain information becomes obsolete and costly (court case related costs).

Access to forest management plans and annual reports submitted to the Forest Guard is particularly limited, with public authorities refusing to provide the information upon request. The grounds for refusing to provide such information have included the reasoning that: forest management plans are not information of public interest and, to consult or copy them, prior consent from their owners and the developer is required; the owners have the right of ownership over the management plans and the elaborators of the plans have the right of intellectual property over the content of the works; and forest management plans contain confidential information (technical
information and personal data), the disclosure of which may negatively affect the owner. Furthermore, the environmental public authority has asked to receive from the requestee written agreement from the owners and the elaborators of the forest management plans, allowing the publication of the information and data from these plans. Moreover, the ministry has insisted that such plans are not part of information of public interest and informed the requestee that, in the event of a court decision to provide copies of these plans, they will have to be provided by their holders.67

Finally, minutes of public hearings are never posted on-line on the website of NEPA or LEPAs.

5.2 Public participation in decision-making on environmental matters

Non-governmental organizations

The ministry in charge of the environment has a data base listing 119 environmental NGOs. Two environmental NGOs are recognized as NGOs of public utility – Foundation “Group for ecological and sustainable development initiative” (Governmental Decision No. 580/2015), and Romanian Association for Environment (Governmental Decision No. 447/2018). Coalitions of NGOs include Coalition Natura 2000.

Further examples of environmental associations include the Văcărești Natural Park Association (https://parcnaturalvacaresti.ro/en/our-association) established in 2014 by a group of environment protection experts and activists, whose work resulted in the establishment of the first urban nature park in Romania - Văcărești Natural Park, in the centre of Bucharest capital in 2016 (Government Decision No. 349/2016).

The ministry in charge of the environment is of the view that environmental NGOs are involved in current environmental matters and have good knowledge about environmental protection. There are some domains, like energy and the nuclear sector, in which NGOs are very eager to get involved. An example of cooperation between NGOs and the General Department of Forests in given in box 5.2.

<table>
<thead>
<tr>
<th>Box 5.2: Cooperation between NGOs and public authority in charge of forests</th>
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<tbody>
<tr>
<td>Cooperation between the public authority for forests (General Department for Forests of the former Ministry of Water and Forests) and NGOs has been focussed mainly on environmental protection aspects, such as activities to enforce legislation on illegal logging and to identify and establish protection regimes for valuable forest ecosystems (e.g., those included in the National Catalogue of virgin and quasi-virgin forests and the sites included in the UNESCO World Heritage List).</td>
</tr>
<tr>
<td>Examples of written agreements for cooperation include two protocols for collaboration concluded in 2014. The first protocol, on protection of virgin and quasi-virgin forests in Romania and preventing and combating the trade in illegally harvested timber from Romania’s forests, was made between the then Ministry of Environment and Climate Change and the WWF Danube–Carpathian Programme Romania. As a result of that collaboration, a guide on good practices for national operators for implementing the Regulation (EU) No 995/2010 laying down the obligations of operators who place timber and timber products on the market, and risks maps for illegal logging in Romania were developed.</td>
</tr>
<tr>
<td>The second protocol, on developing and completing the nomination process of candidate sites for the registration of virgin and ancient beech forests in Romania on the UNESCO World Heritage List, was between the Department of Water, Forests and Fisheries, the National Administration of Forests (Romsilva), the Institute of Forest Research and Management Planning, the WWF Danube–Carpathian Programme Romania and Greenpeace in Central and Eastern Europe (CEE) Romania. In 2017 the work resulted in the inclusion of eight sites with 12 components covering 24,000 ha and 64,500 ha area of buffer zone as part of “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”.</td>
</tr>
</tbody>
</table>

During the procedures for environmental impact assessment, strategic environmental assessment and environmental permitting, the ministry in charge of the environment established a practice of informing the NGOs that declared themselves to be “public concerned” or that expressed their interest in the procedures, through letters or e-mails, about the start of the consultation period or about the public hearing.

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67 Based on the email response to the Association Agent Green to their request for information (No. 5341/24.06.2020), received on 24 July 2020 from the Ministry of Environment, Waters and Forests.
Environmental NGOs can cooperate with NEPA and LEPAs by engaging in the development of Local Environmental Action Plans and by participating in the meetings of the Technical Assessment Commission.

Cooperation between environmental NGOs and local environmental authorities is reportedly better than with the national governmental authorities. One example of a partnership for sustainable development resulted from joint efforts by Bankwatch Romania and Greenpeace Romania that led to the signature in July 2019 of a memorandum of understanding “Jiu Valley Partnership for a Just Transition” by the six mayors in the Jiu Valley (one of Romania’s main mining regions) aimed at facilitating a gradual, efficient and participatory transition from a coal-based economy to a more sustainable and diversified model. The Jiu Valley Partnership for Just Transition focuses on collaborative participation and the involvement of public and private institutions, trade unions and civil society. The mayors are expected to support projects in such a way that no social category is left behind in the energy transition. The six local administrations committing to the partnership promised to take an active role in the development of a strategy for the transition and its implementation, including in identifying projects that will benefit their communities.68

**Funding opportunities**

Since 2016 a decrease in funding opportunities was observed according to the representatives of several environmental NGOs. Also, over the last three years an increase in antagonism between NGOs and public authorities was felt by the representatives of several NGOs interviewed. An obstacle to NGO engagement in environmental projects was the short timeframe for application and implementation of such projects, which discouraged their applications in subsequent years. For instance, calls for application for annual projects were sometimes made in mid-year with a three-month timeframe for applying, which left only two months for implementation. Often, such projects did not foresee salary costs which is another challenge for the continuing involvement of NGOs.

**Environment Fund Administration**

NGOs can apply to participate in relevant activities funded by the ministry in charge of the environment through the Environment Fund Administration. As at December 2019, three such activities were on-going: Jalopy and Jalopy Plus programmes, and various awareness-raising campaigns (chapters 3 and 10). The Jalopy (Rabla) programme is essentially a scrappage programme, aimed at renewing the national car fleet, whilst the Jalopy Plus (Rabla Plus) programme is meant to stimulate the purchase of plug-in hybrid electric vehicles. The procedures for NGO participation in the two programmes are set out in the call texts and to some extent are similar to the conditions pertaining to economic operators. Most importantly, each NGO should prove that it does not have any debts to the national and local budgets, nor to the budget of the Environment Fund Administration. Since 2012, 129 NGOs have been granted funding for the Jalopy programme (176 vehicles have been purchased) and, since 2016, three NGOs have purchased each one plug-in hybrid electric vehicle through the Jalopy Plus programme (as at December 2019). In addition, NGOs can be part of, or contribute to, the awareness raising campaign on the selective collection of garbage, where, even though NGOs are not eligible applicants, they can partner with local authorities in order to raise awareness of civil society on waste recycling and sorting.

Progress in the implementation of Recommendation 3.3 from the Second EPR of Romania is mixed as at December 2019 and could be considered as partially implemented. It remains relevant to be fully implemented. In 2012, the then Ministry of Environment and Forests was recommended to: (a) create more opportunities to meet and discuss with NGOs to explore ways and means to jointly implement environmental projects; and (b) enhance information provided to the environmental NGO community about programmes and projects financed from the Environmental Fund and how such funds can be accessed.

Point (a) is implemented to a limited extent through including one representative of an environmental NGO in the Advisory Committee, which is a decision-making body of the Environment Fund Administration established to approve by vote the projects proposed by the Steering Committee to be financed from the Environment Fund.69

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69 According to the Emergency Ordinance on the Environmental Fund (No. 196/2005 as amended in 2017 (No. 48/2017)), a representative of an environmental NGO is included as member of the Advisory Committee.
As at December 2019, the President of the Centre for Sustainable Policy Ecopolis is the environmental NGO representative in the Committee, composed of 21 members, having served as a member for the previous five years. While a representative of an environmental NGO is engaged in the process of approving a pre-selected list of project proposals, albeit being in minority during the voting procedure, no NGO representative is involved in the process of preparing or revising the financing programmes and the financing guide for each programme. Draft financing guides are posted on the website of the Ministry of Environment, Waters and Forests for 10 days for public consultation, which is too short for organizing meaningful public consultations. The 2003 Law on Public Administration Decision-Making Transparency requests public authorities to post draft normative acts for public consultation for at least 10 days, which allows the Ministry to increase the period of public consultation on the financing guides to enable meaningful public participation in the decision-making on using the environmental funds. Moreover, as at December 2019, there are no Environment Fund Administration programmes for financing, specifically targeting environmental NGO participation.

Point (b) is implemented by the Environment Fund Administration through posting on its website information about the funding opportunities for NGOs (the three opportunities as at December 2019). In addition, the 2015 Communication Strategy of the Environment Fund Administration aims to increase the transparency and improve public communication on the Fund’s activities. Regular press releases and other information are posted on the website of the Administration. Also, project selection irregularities have been alleged such as, for instance, in 2014 the Coalition for the Environment of Romania requested the resignation of the then President of the Environmental Fund Administration citing irregularities in the selection process of projects to raise environmental public awareness. During the process 121 projects were rejected on administrative grounds while the 28 approved projects included projects submitted by pro-governmental NGOs and “brown NGOs”.\(^70\) Based on the provisions of the financing guide, the applicants of the rejected project applications can contest within five days the decision to reject their applications. In case of a second rejection, the applicants can contest that decision within 30 days based on the 2004 Law on Administrative Litigation. The information on approved, rejected and contested applications is posted on the website of the Environment Fund Administration (e.g., for the Rabla Plus Programme on www.afm.ro/vehicule_electrice_persoane_juridice.php).

**Structural Funds**

Environmental NGOs are part of the Structural Funds Committee. NGOs can apply for structural funds\(^71\) to carry out activities in the environment field covering 19 sub-categories\(^72\). However, some environmental NGOs were not aware of this opportunity and believed that they did not have access to structural funds, which often exclude their participation in environmental activities.

**Active Citizens Fund Romania**

Active Citizens Fund Romania (https://activecitizensfund.ro/), with a total value of €46 million for the period of 2019–2024, was launched by the European Economic Area (EEA) Grants in 2019 as a financing programme for NGOs. It is funded by Iceland, Liechtenstein and Norway, and by Norway Grants. The programme aims to develop the long-term sustainability and capacity of the civil society sector, intensifying its role in promoting democratic participation, active citizenship and human rights in several priority areas, including “Democracy, active citizenship, good governance and transparency” and “Environment and climate change”.

**Public participation in decision making on specific activities (projects)**

Public participation in decision making on specific activities (projects) in various sectors, including on energy-related matters (e.g., powerplants, electrical lines) is enabled during the environmental impact assessment (EIA) procedure, in line with the provisions of the 2018 Law on Assessing the Impact of Certain Public and Private Projects on the Environment (No. 292/2018) (2018 Law on EIA). The procedures and deadlines for the public

\(^{70}\) www.finantare.ro/coalitia-pentru-mediu-din-romania-solicita-demisia-presedintelui.afm.html

\(^{71}\) According to the information provided on Romanian website of structural funds (www.fonduri-structurale.ro).

\(^{72}\) Including biodiversity conservation and protection and rehabilitation of degraded ecosystems, sustainable management of natural resources, prevention and management of environmental accidents and disasters, education and environmental monitoring in the Black Sea basin, cooperation and exchange of experience for a low-carbon economy, enhancing resource efficiency, improving air quality and increasing the recycling rate.
Part I: Environmental governance and financing

authorities, the project beneficiary and the public are set in annex V of the 2018 Law. Based on the established procedures, all decisions taken by the competent authorities are to be made available to the public and they become final only after the public had the chance to express its opinion.

Accordingly, the public concerned (including environmental NGOs) has several opportunities to participate at all stages of EIA and can comment during the screening (within 10 days) and scoping (within 20 days) stages, including on the quality of the EIA report (within at least 30 days) and participate in public hearings (having been informed about the hearing at least 30 days in advance). NGOs are notifying the ministry in charge of the environment of being “public concerned” in order to be invited to join the EIA procedure (chapter 2).

Concerning the confidentiality of information, a positive novel development is the provision in the 2018 Law that requires competent authorities to take into account the need to protect the public interest when complying with the restrictions imposed by the legislation on commercial and industrial secrecy, including intellectual property. In addressing a request for information on environmental matters that is subject to restrictions, competent authorities are obliged to interpret the reasons for refusal in a restrictive sense, giving priority to the public interest by revealing and providing information that can be separated from those items or issues that are restricted. Moreover, in addressing a request for information on environmental matters that is subject to restrictions, the competent authorities are required to explain how they considered the public interest. Also, in case of insufficient reasoning in the request (from project beneficiaries) for confidentiality and of a doubt regarding the confidentiality of information, the competent environmental authority can reject the request using the principle of satisfying the public interest. The request rejection allows the competent authority to make available to the public environmental information partially disclosed from the general context of the information that is subject to confidentiality. As at December 2019, there are no examples of applying this novel provision in practice by the public authorities.

The public concerned can challenge the decisions of the competent environmental authority related to EIA to the competent court for administrative litigation in accordance with the 2004 Law on Administrative Litigation.

To develop the administrative capacity of the competent environmental authority and the professional capacity of public servants dealing with EIA and SEA, including public participation in EIA and SEA procedures, the ministry in charge of the environment commissioned the development of several guiding documents. As a result, seven guides on EIA were elaborated, of which two are general guides to provide guidance for all stages of EIA, including in a transboundary context, and five are specific guides for EIA of certain activities (municipal waste incineration, quarries and mining, intensive livestock farming, hydroelectric power plants, and afforestation and deforestation of land). The guides include recommendations on how to apply EIA in practice and are addressed primarily to the environmental authorities that carry out EIA procedures for major projects financed from European Union funds, project holders, as well as developers of EIA reports. The guides are of interest also to the other authorities that are consulted in the EIA procedures according to the legal provisions, as well as to the public, facilitating its better participation in the EIA procedure.73

Public participation in energy-related projects

According to the 2018 Law on EIA, the public can participate in decision-making on energy-related projects in several areas, including: thermal power plants (thermal power ≥ 300 megawatts); nuclear power plants and nuclear reactors (except for research facilities for the production and processing of fissile and fertile materials, the maximum power ≤ one kilowatt of continuous thermal power); dams (water capacity ≥ 10 million m³); construction of overhead power lines (voltage ≥ 220 kV, length ≥ 15 km); combustion of fuels in installations (thermal input ≥ 50 MW); oil and gas refining; coke production; and gasification or liquefaction of coal and of other fuels in installations (thermal input ≥ 20 MW). An example of public participation is given in box 5.3.

Box 5.3: Public participation puts on hold the construction of hydropower plant in the Jiu Gorge National Park

Public participation by gathering more than 30,000 signatures on a public petition initiated by the environmentalist Calin Dejeu, with follow-up actions by WWF-Romania, Bankwatch Romania and Neuer Weg, resulted in the withdrawal by the Bucharest Court of Appeal in December 2017 of building permits for a large hydropower plant. The plant would have had a big negative impact on the environment and the local community.

Public participation in decision-making on permitting

Public participation in decision-making is possible for all permitting procedures (simple and integrated permitting). The public is informed at the beginning of a procedure, by making announcements about the procedure and the environmental documents on the webpage of the public environmental authority responsible for the procedure, whether at national or local level. The beneficiary, developer or operator also makes mass-media announcements, albeit sometimes only in local newspapers with narrow dissemination. The public is given the opportunity to send comments at various steps of the procedure. Usually a public hearing is also organized, during which the public can make comments. All motivated comments are to be considered by the environmental authority when deciding.

The established procedures for issuing environmental permits and integrated environmental permits enables public participation in the decision-making. The procedures are organized by NEPA and LEPAs in line with the 2013 Law on Industrial Emissions, and with the provisions of the 2007 Ministerial Order for the Approval of the Procedure for Issuing Environmental Permits (No. 1798/2007) (annex 3 on procedure for public hearings) and of the 2003 Ministerial Order for the Approval of the Procedure for Issuing Integrated Environmental Permits (No. 818/2003).

Accordingly, the public can participate in the procedures for: (a) issuing integrated environmental permits for new installations; (b) issuing integrated environmental permits for any substantial modifications in an installation; (c) issuing or updating an integrated environmental permit for an installation for which less stringent emission limit values are set on exceptional basis; and (d) updating an integrated environmental permit or the authorization conditions for an installation. NEPA is guided by the 2005 Government Decision on Public Access to Environmental Information in organizing public access to the information necessary for participation in decision-making.

The public can also participate in the decision-making related to NEPA’s elaboration or revision and implementation of the best available techniques, whereby NEPA posts on its website any new or updated conclusions regarding the best available techniques and makes available relevant information to the interested public.

Waste incineration

Concerning the issuance of an environmental permit for waste incineration plants, waste co-incineration plants and installations and activities using organic solvents, special procedures for public participation and related access to information are stipulated in the 2013 Law on Industrial Emissions. In particular, the application for the issue of a new environmental permit for waste incineration plants and waste co-incineration plants is to be made available to the public, sufficiently in advance and in one or more places, so that the public may comment on these application documents before the competent authority responsible for issuing the environmental permit takes a decision. That decision, accompanied by at least one copy of the environmental permit and any subsequent updates, is to also be made available to the public.

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74 https://wwf.panda.org/?319370%252FThe-Jiu-River-saved-from-destruction
Mining, manufacturing and other sectors

No particularities or exceptions are provided for public participation in decision-making related to licencing or permitting procedures for coal exploration and extraction, mining, manufacturing and other major sectors. The authorization of these activities allows for public participation in decision-making in a similar way to the procedure for issuing environmental permits. The beneficiary of the activity applying for an environmental permit is obliged to include in the application documents proof of having informed the public through an announcement on the application for an environmental permit. Also, the environmental assessment, prepared following a request by NEPA or LEPA, is subject to public debate organized in accordance with the public debate procedure.

Pesticides and hazardous wastes

Regarding public participation in decision-making processes for the import or export of hazardous wastes, the transboundary transport of hazardous waste is carried out in line with Regulation (EC) No 1013/2006 on shipments of waste, which does not include any procedure for public participation.

For the registration of pesticides, the process of issuing an authorization for placing on the market and use is carried out according to the provisions of Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market and applies only to those products that contain active substances approved by the European Commission. According to that Regulation, the European Food Safety Authority to which the application dossier is submitted is required without delay to make the summary dossier available to the public, excluding any information in respect of which confidential treatment has been requested and justified, unless there is an overriding public interest in its disclosure. In addition, the public is entitled to have access to several other documents during the authorization procedure, such as the draft assessment report, assessing whether the active substance can be expected to meet the approval criteria, the list of active substances already approved, information about parallel trade permits, and information on plant protection products authorized or withdrawn. Certificates are prepared by the Secretariat of the National Commission for Homologation of Plant Protection Products that operates in line with Ministerial Order No. 60/2013, which include provisions on making certain information accessible to the public.

Public participation in decision making on strategic planning and legislation

The public and NGOs can participate in the development of legislation and normative acts by providing comments on draft acts in accordance with the provisions of the 2003 Law on Public Administration Decision-Making Transparency. Accordingly, 30 days before finalizing the legal act, the initiating authority makes a public announcement about the draft act on its website and in local or national mass media. Such announcements include a justification note, a presentation of the reasons, an approval note regarding the need to adopt the proposed act, an impact study, the draft act and an explanatory note on the way the public can make comments. The public has a minimum of 10 days for submitting comments. In practice, the authorities seldom give more than 10 days for public commenting. A public hearing to discuss the draft act can be organized at the request of the public. The act can be submitted for adoption only after the public has been given the occasion of expressing its opinion on the draft act. Since March 2019, a dedicated on-line platform “E-Consulting” was established by the Government of Romania to facilitate broad consultation and public participation (http://e-consultare.gov.ro/w/).

Public participation in the strategic environmental assessment

For policy documents (strategies, programmes, plans) that are likely to have significant impact on the environment, including on public health, a strategic environmental assessment is carried out in line with the 2004 Government Decision on Establishing the Procedure for Carrying out the Environmental Assessment for Plans.

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75 After giving the applicant two weeks to request that certain parts of the draft assessment report be kept confidential.
76 Ministerial Order No. 60/512/1.258/2013 of the Ministry of Agriculture and Rural Development for the approval of the Regulation on the organization and functioning of the National Commission for Approval of Plant Protection Products and the approval of the Procedures for approval, parallel trade and approval of the second trade name for a plant protection product approved on the territory of Romania.
Chapter 5: Environmental democracy and education for sustainable development

and Programmes (No. 1076/2004 and amendments). Programmes and plans are subject to SEA in many sectors, thereby enabling public participation in the decision-making on their development. Responsibility for involving the public is shared between the beneficiary and the environmental authority. The public can get involved in the decision-making process during the screening and scoping phases of the SEA procedure. (chapter 1)

During the screening phase of the SEA procedure, the beneficiary is required to inform the public about the first draft of the plan or programme, by repeatedly announcing it in mass media (two public announcements three days apart) and by publishing the draft on its web page. The first announcement for the public is made simultaneously with the notification of the environmental authority. The public can send written comments and proposals to the competent environmental authority within 15 days from the last announcement. After the environmental authorities take the screening phase decision, they make it available to the public for 10 days and the comments and opinions expressed by the public are considered during review of the screening decision. The announcement about the screening decision is also published in mass media by the beneficiary.

During scoping phase, the beneficiary of the plan or programme makes public announcements in mass media and posts on its web page information on the availability of plan or programme and environmental assessment report (two public announcements three days apart). These announcements are required to be made 45 days before the public hearing (60 days for plans and programmes with transboundary effects). A public hearing is also organized for discussing the plan or programme and the environmental assessment report. The public can express its opinion by submitting written comments to the beneficiary or to the environmental competent authority before the public hearing and at the public hearing. These comments are considered and can lead to the amendment of the plan or programme and the environmental assessment report. The final decision is also announced in mass media by the beneficiary and on the environmental authority’s web page.

The ministry in charge of the environment posts drafts of normative acts on its website and collects comments from the public. According to the website, as at 5 October 2020, draft government decisions are being posted several times per week for comments by the public within 10 days, which is the minimal deadline prescribed by the 2003 Law on Public Administration Decision-Making Transparency. The continuation of public consultation process in times of COVID-19 pandemic is a positive development, although 10 days might be a too short period for coordinating and organizing comments from the public, especially when there are several draft governmental decisions to be consulted in parallel. For instance, in the period from beginning of September to 5 October 2020 there were 22 draft government decisions posted, all for public consultation withing 10 days. A deadline of 10 days is insufficient for some draft government decisions such as the “draft Government Decision approving the definitive removal from the national forest fund, with compensation, by the Arefu Commune Town Hall, of 3.0730 ha for the “Construction of the A1 Ghitu - Moliviș ski slope” posted on 23 September 2020 or the “draft Government Decision approving the final removal from the national forest fund, without compensation, by Energy Complex Oltenia SA, of 17.0357 ha, for “Continuation of mining works within the license perimeter to UMC Tismana - Tismana I” posted on 1 October 2020.

As an example of a public hearing, the public debate on the draft Energy Strategy organized on 15 October 2019 was moderated by the former Ministry of Environment. The minutes of the public hearing are not posted on the website of the ministry in charge of the environment, but only the response to the questions from the public during the hearing. Comments made by approximately 80 participants were considered by the consultant in revising the environmental assessment of the Strategy.

Environmental NGOs engagement

77 Agriculture; forestry; fishing and aquaculture; energy; industry, including mineral extraction; transport; waste management; water management; telecommunications; tourism; regional development; land-use planning and urbanism and land use.
78 www.mmediu.ro/categorie/proiecte-de-acte-normative/41
Positive examples of NGO engagement in the development of legislation include participation in working groups established for preparing a draft law, such as the working group established in 2017 by the Ministry of Agriculture to revise the 2016 Law on Food Waste (came into force on 1 February 2019), the work of which was recorded and the draft minutes were shared for comments with the participants, which reportedly is a rare practice.

There are examples of when environmental NGOs seek actively to be involved in commenting on draft policies and reach out to national governmental authorities in the lead, but with little or no result. For instance, despite recurrent requests from an the NGO Bankwatch, the draft Integrated National Plan on Energy and Climate Change 2021–2030 was still not available on the website of the Ministry of Energy as at 6 December 2019, less than 30 days before the deadline of 31 December 2019, for environmental NGOs to consult on it and participate in public hearing discussing the draft plan. Such situation was in breach of the process established by the European Commission’s for the development of such plans, according to which EU Member States must give the public early and effective opportunities to participate, including by setting reasonable timeframes, allow the public to be informed, participate and express its views, which should be attached to the plans. The revised (in the light of the European Commission recommendations) draft Plan was made available for public consultation on the website of the Ministry of Economy, Energy and Climate Change from 31 January until 28 February 2020. Thereafter, the document and a summary of comments made to earlier drafts was posted on the Ministry website and E-Consulting platform for the SEA screening phase to decide if the Plan is subject to an environmental assessment procedure, for the final public consultation from 23 April to 23 May 2020, including 18 days for comments from the public having to consider a document of 215 pages, during the exceptional situation related to COVID-19, including confinement at home. In the absence of any other information on-line and given the availability of the Plan on the website of the European Commission in its version of April 2020 as a final document, the Plan was decided not to be subject to an environmental assessment procedure.

Environmental NGOs actively engaged in the commenting process on the Romania’s Sustainable Development Strategy 2030 that was adopted on 9 November 2018 (Government Decision No. 877/2018); however, their view is that their comments were not considered in the final version of the Strategy.

Generally, many environmental NGOs assess the organization of public consultations, with few exceptions, as having been carried out in a manner that does not enable meaningful, effective and inclusive public participation. This results in NGOs being reluctant to participate at all, especially because the minutes of these consultations are published (if they are published at all) without engaging the participants in commenting on their draft, thereby misleading the reader that participating NGOs subscribe to the results of these consultations, even when none of their comments are taken on board.

Another form of participation in the development of environmental policy was provided through the project Public Policies for Sustainable Development (June 2018–November 2019) financed through the Operational Capacity Administrative Programme (POCA). Several environmental NGOs (Ecopolis, Best Associations, BioSilva, 2Celsius and ECOTECA) from Bucharest, Iasi and Suceava submitted to the Ministry of Environment, Waters and Forests proposals for six alternative public policies, normative acts or amendments to the existing legal framework in the areas of waste management, air quality, access to water, food waste, infrastructure for electric vehicles and issues related to forests. The policies have been developed by six working groups with a total of over 100 representatives of civil society participating as members. These policies include for instance a public policy to improve air quality by amending the legislation regarding the environmental stamp for cars registered in Romania, a normative act on the management of waste from pharmaceutical and para-pharmaceutical products from outside the sanitary-medical circuit, and amendments to the 2016 Law on Food Waste Reduction (No. 217/2016). The Ministry was invited to consider these policies for prospective approval and implementation.

In the forests domain, examples of public participation include public consultation on the “National forestry accounting plan of Romania (for the first compliance period 2021–2025)” organized by the Ministry of

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Environment, Waters and Forests in the period from 6 to 16 December 2019, this resulted in a 90-page report with no information on the comments received and whether and how they were taken into account. Another public consultation was organized in the period from 25 September to 15 November 2019 on two documents – the Action Programme for Water Protection against Nitrate Pollution from Agricultural Sources (113 pages), and the new Code of Agricultural Practices (204 pages), with no on-line comments received from the public.

WWF Romania is the only NGO invited by the General Department for Forests of the ministry in charge of the environment to participate in the working groups on the revision of forest legislation.

Even if a public participation opportunity is offered during the process of drafting environmental laws, the adoption of many emergency ordinances containing various derogations from the adopted laws, in which public participation is not foreseen, diminishes the impact of public participation in the first place. Since 2016, this practice is especially felt by the environmental NGOs.

However, the rapid and frequent changes in the environmental legislation, especially since 2016, represent a challenge for ensuring meaningful participation by environmental NGOs in commenting the many drafts within the established timeframe. The frequent use of emergency ordinances, which do not need to be consulted with the public, excludes public participation.

Public participation in decision making on GMO

Public participation in decision making on GMOs is organized in line with the Emergency Ordinance on the Deliberate Introduction into the Environment of Genetically Modified Organisms (No. 43/2007). NEPA, in its capacity as competent authority, consults and informs the public as part of the decision-making process for issuing authorizations and permits for the deliberate release of GMOs, in compliance with the legislation in force on public access to information and on confidentiality. NEPA also informs the public about the review, suspension or withdrawal of authorizations or permits, and about possible accidents or the unintentional transboundary movement of GMOs. Public consultation on GMOs last 30 days, starting on the sixth day from the beginning of the procedure for application for an GMO authorization and ending on the thirty-sixth day. NEPA and LEPA or the townhall (in the locality where the deliberate introduction into the environment is to take place) make available on their website relevant information for the public, except the information considered confidential, and has to acknowledge receipt of any public comments received during the consultation period. Within 10 days after the public consultation, a synthesis of comments received is transmitted to the ministry in charge of the environment and the Biosafety Commission. Following consultation with the ministry in charge of the environment, NEPA is required to establish and implement measures to ensure public participation according to the national legislation.

In addition, the public can participate in decision making on in the permitting procedure for activities using genetically modified microorganisms under isolation conditions, by making comments and proposals within 30 days after the notification was posted on-line. For certain types of GMOs, NEPA, as the competent authority, is required to organize public debates that are supported by the notifier.

NEPA also makes available to the public information on decisions taken or reviewed, by posting them on its website, along with other public information such as permits, GMO registers, GMO sites, various reports of the Biosafety Commission and public information about notifications. The last two notifications posted on the NEPA website (the old website since the new one is not operational temporarily for several weeks as at 11 October 2020) are regarding the introduction of modified corn and sugar beet dating back to 2011.

Public participation in international forums

Representatives of environmental NGOs are not included in national delegations to international meetings and events. Information, materials and the position of Romanian Government on key topics of discussion at international meetings are not made available on the website for the public to have an opportunity to comment on them.

**Public participation in decision making in times of pandemics**

Based on the information posted on the websites of the ministry in charge of the environment and NEPA, public consultations continue during the COVID-19 pandemic to be carried out with a deadline of 10 days for commenting on draft legal, normative and policy acts and decisions. Additional information is not readily available on-line to determine whether any public hearing has been organized by the Ministry since March 2020 in person (respecting safety requirements) or by virtual or other means.

NEPA has posted on its website information on special measures in place during the COVID-19 pandemic, informing the public that all public relations activities usually taking place at the premises of NEPA have been suspended during the special situation period. The physical submission of documents, respectively the collection of documents by individuals and legal entities, is done only by mail, e-mail or fax. For additional information, NEPA recommends the public to contact the specialized departments by phone or email.

Furthermore, during the COVID-19 state of alert decreed in the country, NEPA has adapted the procedure for public participation in decision-making on issuing environmental agreements for project activities. One example is its announcement for the interested public of the submission of the application for the issuance of the environmental agreement for the investment project “Autostrada Ploiești - Buzău”, by the National Company for Road Infrastructure Management. The relevant information can be consulted only on-line on the NEPA website.88 The public’s comments are received by email. The “Statement on the application of the Aarhus Convention during the COVID-19 pandemic and the economic recovery phase” adopted on 2 September 2020 by the Compliance Committee under the Aarhus Convention, provides guidance on holding public hearings.89

As at 7 October 2020, the latest announcement by NEPA about a public hearing on issuing an environmental permit dates back to 16 July 2020.90 According to the announcement, two public hearings were organized in person on 18 August in Suceava County and 19 August 2020 in Botosani County. The public concerned was invited to submit comments to NEPA by 18 August 2020. No other information regarding the outcome of this public hearing is accessible on NEPA website due to a technical issue with the server (as per disclaimer on the website).

### 5.3 Access to justice in environmental matters

Any person who considers themselves harmed in a right or in a legitimate interest, including environment related, has the right to go to the competent court, in line with two main laws: the 2010 Law on the Code of Civil Procedure and the 2004 Law on Administrative Litigation. The public (individuals and NGOs) has the right to sue the actions or inactions of public authorities that contravene the provisions of the national environmental legislation, on procedural and substantive grounds. In the case of a dispute in the field of environmental protection, victims can apply individually to the courts or be represented by NGOs.

In addition, in line with the 2018 Law on EIA, the public can challenge in court the decision or an omission during the screening stage, the issue of an environmental agreement or the rejection of an application for one, and the acceptance or rejection of an application for development approval. Before going to court the public has the obligation to request, within 30 days from the decision made available to the public, the concerned public authority to revoke in whole or in part the respective decision. Consequently, public authorities concerned have the obligation to address the preliminary complaint within 30 days from receiving it, free of charge and in a fair, prompt and correct manner. Furthermore, all documents and decisions made are to include concrete information

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88 In the section Regulations / Environmental agreement / Documentation EIA and EA procedure.
90 www.anpm.ro/documents/12220/47209762/anunt+ANPM+Varfu+Campului.pdf/d43a492f-0892-42a3-8719-8ee721ebac5d
about the public access to the related procedures. For example, in the period 2011–2019, NEPA was involved in
17 litigations (some still on-going) before the civil law courts.

Summary information about court cases, including on environmental matters, are available on the Ministry of
Justice Court Portal (http://portal.just.ro/). For example, two court cases by environmental NGOs (Association
Green Agent challenging the decision of the Ministry of Environment, Waters and Forests, and Association
Bankwatch Romania challenging the decision of the Jiu River Water Basin Administration) are available on the
legal portal91.

There are no environmental courts. Cases related to environmental matters are handled by various courts
depending on the case subject. The legal oversight of decisions of public authorities, which concern
environmental protection, is performed by the administrative litigation courts. An environmental judicial case
lasts for some two-three years on average.

Courts do not have judges specialized in environmental cases or experts specialized in environmental law; they
maintain lists of judicial experts in various fields, including a list of judicial experts specializing in environmental
protection.

During the university study of law, students can choose to take a course on environmental law, which is part of
the optional curriculum. However, reportedly, environmental law is not a popular optional course among students.
For instance, the University Babes-Bolyai Cluj-Napoca is providing its law students with the opportunity to study
environmental law (three credits) as an elective course during their second, third and fourth years of a bachelor’s
degree, and the European Union (EU) environmental law and policy (six credits) as a mandatory course during
the master’s degree with specialization on EU private law.

The Recommendation 2.4 made in the Second EPR asking the Government to increase the capacity to address
environmental cases within existing judicial authorities and by organizational adjustments, such as the creation
of dedicated environmental courts or environmental divisions within existing courts, was not implemented as at
December 2019. (chapter 2).

Achievement of the environmental dimension of SDG Target 16.3 (promote the rule of law at the national and
international levels and ensure equal access to justice for all) is done through ensuring access to justice in
environmental matters. The premises necessary for the public, including environmental NGOs, to challenge the
decision or omission thereof on environmental matters by the public authorities, are established in Romania. At
the same time, several challenges remain to be addressed, such as the lack of legal personnel specialized in
environmental cases, the lack of regular training on the provisions of the Aarhus Convention for judicial
authorities, environmental legal cases lasting several years, costs related to environmental court cases not
allowing all NGOs to have access to justice in environmental matters, and compliance with court decisions
requiring enforcement.

Legal aid

Romania maintains a state-sponsored (funded by the Ministry of Justice) legal aid system for eligible persons,
including indigent persons.92 In order to exercise their rights in court, the public may request the granting of
public legal aid, based on the provisions of 2010 Law on the Code of Civil Procedure and the Emergency
Ordinance on Public Legal Aid in Civil Matters (No. 51/2008). A considerable number of practising lawyers are
registered as legal aid lawyers (5,354 out of 11,025 as at 29 May 2019).

NGOs are not eligible for legal aid provided by the State. Pro-bono legal aid in the environmental area is mostly
received from national and international NGOs, associations and foundations. One example of supporting pro
bono legal aid for NGOs, including those working on the rehabilitation of Romanian forest, was a project “Pro
Bono legal services for NGOs” launched in 2012 by the Foundation for the Development of Civil Society with

91http://portal.just.ro/3/SitePages/dosar.aspx?id_inst=3&id_dosar=300000000907217 and
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eleven law firms affiliated to the pro bono network.\(^93\) There is an increasing interest and demand in pro bono legal aid in the environmental area. However, the absence of a specific legal framework to support and encourage pro bono legal aid, including for NGOs working in the environmental area, is a bottleneck in the development of such aid.\(^94\)

In 2013–2014, the Association “Save Bucharest”\(^95\) together with several other partner organizations implemented a project with financial support (€67,390) from NGO Fund in Romania\(^6\) called “Tools for access to justice of NGOs”. The project offered free legal counselling to NGOs and citizens interested in urban planning, construction, heritage protection and environmental protection, including by means of a call centre.\(^97\) In 2012, the Association issued a legal practice publication on the “Protection of the heritage and access to justice of NGOs” in support to the development of NGO capacity in the area of administrative litigation and environmental law.

**Ombudsman**

The public can address the office of the Ombudsman, in Romania known as the People’s Advocate (https://avp.ro/), or the Mediation Council (www.cmediere.ro/) with requests regarding environmental protection.

The public has the right to submit petitions to the Ombudsman. A petition must be submitted in writing and is free of stamp tax. For those petitions upheld by the Ombudsman, the Ombudsman investigates and issues recommendations to the relevant public authorities for subsequent implementation.

In the period 2012–2019, the Ombudsman’s activity in the field of protecting the right to a healthy environment (provided by article 35 of Romania’s Constitution) increased from 2 to 30 petitions solved with a specific investigation procedure. The number of petitions submitted that were beyond the competence of Ombudsman also increased in the same period from 5 to 69. The commonest issues covered by the petitions pertain to illegal dumping, water pollution, livestock farms generated pollution and non-compliant measures in protected areas. Since 2017 several petitions addressed the security of local population (especially in mountainous regions) from the increasing number of brown bears (Ursus arctos), predominantly females with cubs, descending from the mountains to human settlements in search for food. The considerable increase in the total number of petitions submitted regarding the right to a healthy environment, reaching nearly 100 in 2019 (up from 5 in 2012), could be a sign of increased trust and awareness about the work of the Ombudsman in this area as well as of stronger engagement by the public.

In addition to acting on the petitions received from the public, the Ombudsman’s office carries out ex officio enquiries initiated based on information published by international and national mass-media, scientific studies and reports.\(^98\) One such case was undertaken each year in the period 2012–2018. In 2019 eight cases have been concluded or were in progress, including on illegal deforestation in national protected areas, pollution of the Black Sea, air pollution from landfills, construction in protected areas, obsolete water supply infrastructure and compliance with regulations for drinking water and wastewater treatment.

The monitoring of implementation of the recommendations on the right to a healthy environment issued by the Ombudsman is carried out on ad-hoc basis by sending a formal enquiry letter to the relevant authority. In some cases, relevant authorities inform the Ombudsman on their own initiative about progress made in implementing its recommendations. A special report on the protection of forests areas in Romania was prepared the office of the Ombudsman, identifying key actions needed in order to address illegal logging.

**Environmental NGOs seeking justice in environmental matters**

\(^{93}\) [www.fdsc.ro/servicii-juridice-pro-bono-pentru-onguri](http://www.fdsc.ro/servicii-juridice-pro-bono-pentru-onguri)

\(^{94}\) Romanian legislation does not regulate pro bono legal work; it regulates the right to benefit from state-sponsored legal aid and how the legal aid is financed and organized ([www.unbr.ro/wp-content/uploads/2019/05/01_RAPORTUL-CONSIILULUI-UNBR-Congresul-avocatilor-2019_v8_CLEAN.pdf](http://www.unbr.ro/wp-content/uploads/2019/05/01_RAPORTUL-CONSIILULUI-UNBR-Congresul-avocatilor-2019_v8_CLEAN.pdf)).


\(^{96}\) [http://fondong.fdsc.ro](http://fondong.fdsc.ro)

\(^{97}\) As at 15 January 2020 the project website was not working ([www.juristurban.ro](http://www.juristurban.ro)).

\(^{98}\) e.g., EEA, IUCN, EuroNatur, BBC and the Environment Investigation Agency.
As a result of public participation following a complaint filed by Environmental Association Agent Green, logging permits issued by Romsilva in 2018 in the intact natural beech forest in Domogled – Valea Cernei National Park/UNESCO World Heritage buffer zone and Mehedinti Natural Park, were suspended by the court in November 2019. Furthermore, Agent Green filed and won several court cases regarding the refusal to provide the requested forest management plans. Another case (489/3/2020) awaits the court decision, as the hearing was postponed due to the COVID-19 emergency in the country and took place on 17 June 2020. The environmental public authorities concerned refuse to execute the court decision and are avoiding providing the requested information. The ministry in charge of the environment has files appeals (for case No. 20292/3/2018) thereby extending even more the period of non-provision of information and using up the financial resources of environmental NGOs. Agent Green continues to ask for other forest management plans without success and, with many court cases underway, its financial resources have been exhausted and it cannot afford to continue challenging the decision in court.

One of the most active national NGOs is the Association Bankwatch Romania operating since July 2012 as a driving force for access to justice in environmental matters. Bankwatch Romania has won several court cases in environmental matters, including when challenging the non-provision of environmental information.

An example of a recent case that it won (24 May 2019) is an appeal to the Bucharest Court of Appeal from Oltenia Energy Complex Joint Stock Company against a ruling made on 16 November 2018 by the Bucharest Tribunal (Section on Administrative and Fiscal Litigation) concerning the non-provision of information requested by Bankwatch on emissions into the environment from its power plants and the methodology for their calculations. Oltenia Energy alleged that the Bucharest Tribunal misinterpreted the request for information of daily emission values, 24-hour concentrations for 2017 and the first quarter of 2018, which was not in the company’s view information of public interest to be provided in line with the 2001 Law on Free Access to Information of Public Interest, but was classified information, asserting that the publication of this information would infringe the principle of fair competition.

The Court of Appeal ruled in favour of Bankwatch citing the 2005 Government Decision on Public Access to Information on Environmental Matters (No. 878) that stipulates the criteria for classified information, which do not correspond to the criteria invoked by the Oltenia Energy. The case, including the ruling on the appeal by Oltenia Energy, lasted one and a half years. According to the 2001 Law on Free Access to Information of Public Interest the decision of the Court of Appeal is final and irrevocable, thus Oltenia Energy is expected to provide the information on daily emission values from its power plants and the methodology for their calculations to Bankwatch Romania.

As at 30 September 2020, Oltenia Energy provided the emission limit values but not entirely. For Turceni Power Plant they only mentioned that the legal limits were respected. Bankwatch Romania could start a forced execution procedure but the information is already old. They are preparing to request the emission limit values for 2019 with the expectation to receive them in a complete and timely manner.

Problems with access to information led Bankwatch Romania to file a new case in court challenging the non-provision of information on emission values for the priority substances in Jiu River (court case No. 19334/3/2020) by the Jiu Water Basin Administration, with the court hearing scheduled for 26 November 2020.

5.4 Environmental education and education for sustainable development

Integration of environmental education and education for sustainable development into curricula


Environmental education (EE) is integrated into the formal education system through the optional curricula, civic education and extra-curricular activities. In addition, EE and to some extent education for sustainable development (ESD) is mainstreamed into all subjects of formal curricula at the initiative of each teacher. According to the teachers interviewed in three secondary schools (two in Bucharest and one in Brașov) students at all levels of education are eager to discuss environmental related themes, especially related to climate change, plastic pollution, waste recycling, air and water pollution and nature conservation, and naturally influence the school’s and teacher’s choice of such themes for both curricular and extra-curricular activities.

For example, since 2007 environmental education is approved by the ministry in charge of education (Ministry of Education and Science, as at October 2020) as an optional subject called Ecological and Environmental Protection Education, at the initiative of each educational institution for its annual optional curricula for preschool, primary and lower secondary (gymnasium) education in grades five to seven.

The knowledge and skills acquired from environmental education are built gradually, starting in preschool where children discover the main components of the natural environment, learn to identify sources of pollution and options for their elimination, understand the concepts of reuse and recycling by learning how to save, produce products from natural materials, observe the beauty of nature, show concern for the environment, express thoughts and feelings towards the environment, and apply, in real life contexts, the appropriate rules and norms regarding environmental protection.

In primary school, pupils learn to understand and use the basic notions of environmental protection, developing and practicing environmental exploration and investigation, and developing a responsible attitude towards maintaining and improving the quality of the environment.

In lower secondary school (grades five to seven), pupils learn to use notions, concepts and principles specific to environmental protection, develop the capacity to investigate the real world, and assume and implement a responsible behaviour towards the environment.

Early education

Early education, consisting of pre-preschool (0–3-year-olds) and preschool (3–6-year-olds) levels, is optional in Romania. The new curriculum for early education adopted in August 2019 (www.edu.ro/sites/default/files/Curriculum%20ET_2019_aug.pdf) stipulates that EE activities are free-choice activities and can be integrated into several other activities, such as in personal development activities and experiential field activities, depending on the type and theme of these activities and how well they correlate with the theme of the project or with the weekly theme. The field of cognitive development and knowledge of the world – one of five development fields in the curriculum structure – can integrate naturally EE and ESD.

The early education curriculum encompasses six major themes, including the theme “How is it, was and will be here on Earth?” (mandatory for the 5-6 year-old children in the last grade of preschool education) that covers an exploration of the evolution of life on Earth, with the identification of life-sustaining factors, problems of the contemporary world (e.g., pollution, global warming, overpopulation) and an exploration of orientation in space and time, personal histories, history and geography from a local and global perspective, homes and travel, discoveries, and the contribution of humans and civilizations to evolution in time and space. While environmental and sustainable development themes are included, to some extent, in the new curriculum, and EE is mentioned once, ESD is not mentioned.

In the previous 2008 curricula for the preschool education (3-6/7-year-old), ESD was suggested as an approach for teaching the general theme of “What and how do I want to be”, including subjects such as Science and Man and society.

Primary education

Primary education is mandatory in Romania and takes place for five years starting with the preparatory grade and ending with grade four (for 6/7–10-year-old children). Primary school education integrates environmental and sustainable development related themes in several subjects such as natural sciences taught during the five years of primary school (one hour per week for grade preparatory to grade four), geography (one hour per week for
grade four), civic education (one hour per week for grade three and four), visual arts and practical abilities (two hours per week for preparatory grade to grade three, one hour per week for grade four), and personal development (two hours per week for preparatory grade, one hour per week for grade one and two).

Optional curricula include the subject “Ecological and Environmental Protection Education” and integrates EE in other subjects such as “Prepared for Life. Education for Life and Community” that was developed in 2017 for every year of the five-year primary school education\textsuperscript{102}.

EE is integrated in the primary school curricula (optional and, to some extent, mandatory curricula). ESD as such is not included in any curricula, albeit themes related to sustainable development (social dimension mostly) are mainstreamed in subjects and discussions during classes.

**Lower secondary education (gymnasium)**

Lower secondary education is mandatory in Romania and lasts five years from grades five to eight (for 11–14-year-old children). EE is integrated into various subjects of the mandatory curricula and is included among subjects of the optional curricula chosen by the school (in consultation with parents through a Parents’ Committee).

Subjects related to natural science, man and society, technology and counselling and guidance are predominantly used for EE. The curriculum includes environmental and sustainable development related themes in natural sciences subjects, such as biology, chemistry, geography and physics. Under the Social Education subject (one hour per week), critical thinking and children’s rights are taught to the fifth graders, intercultural education to sixth-graders, education for a democratic citizenship to seventh graders and economic-financial education to the eighth graders.

During four years of gymnasium, the fifth- to eighth-graders study technology and a practical application subject (one hour per week) that includes environmental protection and sustainable development aiming to develop the competence to promote a technological environment favourable for sustainable development. For instance, fifth-graders learn to select products and technologies that preserve the environment and health, the sixth-graders identify ways to save resources and reuse waste, the seventh-graders do a critical analysis of the consequences of technological development on the health and well-being of individuals, communities and the environment, and the eighth-graders implement initiatives for a healthy environment at school and community levels. Teaching methods for the subject include investigative case-based learning approach, debates, role-playing, brainstorming, case studies, modelling, simulation, problem-solving and interviews.

Environmental and sustainable development themes are also integrated into subjects related to language and communication and arts, to an extent according to the individual choice of teachers. Given that environmental protection, climate change and sustainable development are gaining prominence on the political agenda globally and nationally in Romania, the teachers are incentivised to address such themes during their classes, in response to the growing demand from the pupils. In addition, schools (following a decision of the Parents’ Committee) can choose subjects for the school’s annual optional curricula, including “Eco-education for green schools” that is being promoted by WWF with financial support from Norway (Box 5.4).

The choice of manuals is up to the school and includes an option of manuals with enhanced content on environmental and sustainable development themes. Mass media and social platforms play an important role in raising awareness of children, parents and teachers.

**Box 5.4: Eco-education for Green Schools**

Bucharest secondary school named after Titu Maiorescu participates in the eco-school network since 2007 and, since 2016, offers “Eco-education for Green Schools” as an optional course for pupils from fifth to eighth grades. EE and ESD are also integrated into subjects other than the natural sciences, such as in English language, for which the schoolbooks chosen (the “Enterprise” manual) include many environmental and sustainable development related themes. Since 2015–2016, environmental protection has obtained prominence, so pushing teachers to include more environmental

\textsuperscript{102} \url{http://programe.ise.ro/Portals/1/Curriculum/2018-progr/PRIM/Pregatiti%20pentru%20viata_Clasele%200-IV_opt.pdf}
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themes in their teaching (the teacher can adapt individually the content of the curriculum up to 25 per cent). The school’s eco-club has 40 members (1 or 2 members from each class) who promote environmental protection on the school campus.

The school administration estimates that issues related to environmental protection and sustainable development constitute at least 50 per cent of the school curricula (both mandatory and optional subjects) and extracurricular activities. The school is of the view that the theoretical knowledge of environmental and sustainable development themes is well covered by the current curricula, but would wish to enhance its practical activities, in which pupils engage with great enthusiasm but which can be a challenging task for a school located in the centre of the city. In the absence of a school green yard, the school is organizing excursions to nature sites outside the city for carrying out practical activities and is considering partnering with the local authority with a view to use the nearby park for green activities. The school promoted EE and environmental protection also in the framework of the national programme “School in a different way (Scoala altfel)” as part of its informal education activities.

The main challenges faced by the school in enhancing the integration of environmental education and ESD are the already very busy curricula and the lack of green areas on school premises. Assessing and identifying positive experiences in applying EE and ESD in practice by schools and exchanging such experience and peer learning were needed, as were the production of more practical schoolbooks.

Upper secondary education (lyceum)

The first two years (grades nine and ten) of the upper secondary education are mandatory in Romania. Upper secondary education includes options for several paths: general (theoretical) education path (science and humanities); technical vocational education path (technical, services, and natural resources and environmental protection); and vocational education path (military, theological, sports, artistic and pedagogical).

The general education path does not offer separate courses on ecology or sustainable development. EE is typically included in science subjects such as biology, chemistry and physics. ESD is mainstreamed to an extent into optional curricula, through which lyceums can choose the subject “education for democracy” that includes environmental activities, such as student engagement in projects on public participation in decision-making on environmental matters, and the subject “human rights”. These subjects are part of the social dimension of ESD.

“Emil Racoviţă” College of Natural Sciences located in Braşov is an example of EE institution that includes themes related to environmental protection in its compulsory curriculum. Another example of promoting EE and ESD are activities carried out by the International school of Bucharest (Box 5.5).

Examples of approaches to promote EE include organizing dedicated Olympic competitions in the education system at national and local levels, such as the Olympiad on “Natural resources and Environmental Protection” organized annually since 2008 for subjects from the curricular area “Technologies” for pupils from the second grade of primary education until the twelfth grade of upper secondary education.

Since 2016, students from the general education path are familiarized with SDGs, sometimes during classes, but mostly during tutoring hours and extra-curricular activities.

Box 5.5: International School of Bucharest engaging in environmental protection and sustainable development

The International School of Bucharest (www.isb.ro/) promotes EE and ESD in its curricula and in extra-curricular activities. Since 2016, the school introduced a course on Environmental System and Societies which has become very popular with students and was followed by 57 students in the 2019–2020 school year, constituting approximately half of all students in years 12 and 13. In addition, the school has a compulsory course for students of its upper secondary levels on human rights offered by Amnesty International103. Students learn through ESD learning approaches such as critical thinking, research-based studies, open discussion and project-based activities.

Furthermore, in 2017–2018, the school successfully launched a campaign “ISB Go Green” that continued in 2019–2020, promoting ESD for students. In 2019–2020 the campaign focussed on a range of issues from agriculture to zero emissions in transport. Students engage in projects for planting trees, developing greener options for the canteen and analysing their own footprint. These issues are addressed during the standard lessons of the school’s curriculum, tutoring time, school assemblies and other extra-curricular activities.

The school has been part of the Eco-schools network since 2015 and has an ECO Committee, with the help of which it organizes regularly various EE and ESD activities, including students’ human rights projects, arts from waste (e.g., a mosaic made of bottle caps during art lessons), the Global Perspective research assignments, a paperless day in school, the collection of plastic, and donations of books and presents to less fortunate communities. Moreover, the school initiated an on-line petition “Stop dumping waste around our school” that got 24,550 signatures and resulted in the involvement of local authorities and police officers who fined the landowners neighbouring the school, which is located in the outskirts of Bucharest.

Vocational education and training

Vocational education and training include several options. One option is to follow the vocational education paths as part of upper secondary education, which begins after completing the lower secondary education (eighth grade) and lasts for a minimum of three years. Another option is to take apprenticeship training courses (720 hours) after the tenth grade of lyceum (second year of the upper secondary education), the completion of which is mandatory in Romania. Post-secondary education is also available for professional development and is provided in lyceums, colleges and foremen schools for one to three years, depending on the specialization.

As part of the technical vocational education path of the upper secondary education, the natural resources and environmental protection education programmes aim to develop competences in agriculture, silviculture, environmental protection and food industry, and include specialities such as environmental and environmental protection technician, hydrometeorology technician, forestry and logging technician and organic farming technician. The curricula for grade nine\textsuperscript{104} of the four-year vocational education and training in environmental protection, adopted in 2016, consists of five modules with a total of 414 hours per year, of which 324 hours theoretical (216), technological laboratory (36) and practical training (72), and 90 hours of apprenticeship. Grade ten studies consist of five modules (440 hours), including on environmental legislation. Grade eleven has seven modules (513 hours) and grade twelve has eight modules (428 hours), including on waste management and air, soil and water quality monitoring and control.

Environmental protection themes are included on a mandatory basis in the formal curricula only in lyceums and colleges with environmental specializations, such as Braşov colleges “Mircea Cristea” Technical College offering a degree “environmental technician and environmental quality protection”, and “Grigore Antipa” College of Science offering a degree as “certified environmental technician”.

Higher education

Higher education is provided by universities, academies of studies, institutes and schools of higher education. Romania has a total of 101 higher education institutions (47 civil institutions, 7 military institutions, 38 private universities and 9 institutions operating temporarily), including an ecological university, which is a private institution. Environment protection and sustainable development themes are integrated to varying degrees in the studies (both compulsory and optional curricula) depending on the specialization. As at December 2019, over 240 undergraduate and master study programmes included topics such as climate change, social and economic change management, environmental economics, public policy and environmental management, alternative energies, wastewater and green technologies. In addition to bachelor’s degree programmes, universities have introduced master programmes related to sustainable development themes. None of these institutions have a compulsory discipline on EE or ESD. EE and ESD are offered as optional courses at the Faculty of Psychology and Education Sciences of Transilvania University.

Ecological University of Bucharest

The Ecological University of Bucharest (www.ueb.ro/en/) has seven faculties, including the Faculty of Ecology and Environmental Protection (www.ueb.ro/ecologie/), the graduates of which have the potential for employment by environmental public authorities at national and local levels, national and international environmental education.
consultancies and projects, and environmental NGOs. Since its establishment in 1990 it has had 45,000 graduates with bachelors’ and masters’ in science degrees.

Students studying for three years for a bachelor’s degree in environmental science, to become future teachers and environmental specialists, take courses on issues related to sustainable development, such as waste management, nature conservation, environmental agriculture, pollution and environmental protection, and EIA methodology.

Two-year master’s degree studies are offered in the following three programmes, in the framework of which students study courses relevant for environmental protection and sustainable development:

- Management of natural resources, including non-renewable resources, biodiversity conservation, EIA, Romanian mineral resources, and rehabilitation of natural areas;
- Managing the effects of climate change, including climate change policies, infrastructure and urban climate, energy resources and alternatives, environmental risks, agriculture, and global warming;
- Environmental impact assessment, including EIA methodology, environmental impact of electromagnetic radiation and agricultural policies, managing natural resources, energy and environment, monitoring environmental quality, national environmental strategies, sustainable forest management, impact on human health, environmentally-friendly exploitation of zootecchnical resources, and public communication and information in the EIA context.

Master’s degree students carry out specialized internships organized based on cooperation agreements with institutions working on environmental protection and with economic operators.

Since 2013, as part of its scientific environmental activities, the University organizes annual international conferences under the overarching theme “Ecology of Twenty-first Century” (www.ueb.ro/ecologie/conferinte.php).

The University promotes the integration of environmental education into other specialities in accordance with the provisions of its Charter, setting an objective to prepare future specialists in the spirit of knowledge and understanding of the role of ecology and environmental protection in all fields of activity.

Training of teachers

In Romania continuous training for teachers is mandatory. Trainings are offered by the Teacher Houses which is accredited by the ministry in charge of education, by the universities or other providers. Trainings offered by Teachers Houses, approved annually by the ministry, include the organization of courses, seminars and workshops. The accredited training by the ministry courses related to environment and sustainable development include: education for sustainable development: developing life abilities; education for sustainable development: school-family-community partnership; environmental protection: the main criterion for a sustainable lifestyle; integrating critical thinking in the curriculum; sustainability in the protection of the environment: integral part of the educational process; developing the life skills of pupils in the context of sustainable development; education for democracy; methods of critical thinking; learning strategies for critical thinking; volunteering for the environment: present and perspectives; education for gender equality: strategies for prevention and active intervention in the school environment; and education for the environment: ways of doing it. The choice of these training courses is optional.

As at December 2019, there is no compulsory training on EE or ESD for teachers and educational personnel. Often, due to budgetary constraints, teachers improve their knowledge on environmental protection and sustainable development themes as well as EE and ESD through self-study or through national or international projects.

Training and retraining of civil servants

In-service training of civil servants is regulated by the 2019 Administrative Code (GEO No. 57/2019) stipulating that public authorities have the obligation to ensure for each civil servant the participation in at least one training or professional development programme every two years, organized by the National Institute of Administration or other professional training providers, and to provide in the budget the necessary resources. Furthermore, public
authorities have the obligation to elaborate annually the plan of professional development of civil servants. In practice, for the last several years, the staff of the ministry in charge of the environment did not have any in-service training due to budgetary constraints.

At the same time, in 2019 the ministry provided training on the new 2018 Law on EIA and the EIA Guides for staff of NEPA and LEPAs, Romania Waters, National Agency for Natural Protected Areas, waste management authorities and large infrastructure project authorities. The training, organized within the project “The professional training of the personnel of the competent authorities for the environmental protection regarding the environmental impact assessment and the environmental assessment for the period 2014–2020”, consisted in 2019 of five one-day sessions to disseminate EIA guidelines (held in Constanta, Bucharest, Timisoara and Poiana Brașov for 406 participants) and five four-day training sessions of environmental authorities on methodological guidelines (held in Tulcea, Bucharest, Oradea and Poiana Brașov for 144 beneficiaries). The trainees were staff from central and local environmental public authorities, the Technical Analysis Commission and other persons who develop EIA reports and representatives of investment directorates within the county councils and municipalities. The ministry plans to continue such trainings for the next two to three years with funding from EU, co-funded 15 per cent from the Romanian budget.

NEPA has a low budget for trainings, workshops or seminars in order to deliver specialized information for local environmental protection agencies and does not conduct them regularly.

EPA Brașov conducts annual in-service training for its personnel (36 staff on payroll), mostly because of the constant change in the environmental legislation. The last two training courses took place in November 2018 and February 2019 (on legislation). Depending on the training programme, courses can last from two to five days. To keep up with the frequent legislation changes, EPA was considering increasing the number of such in-service training.

The National Environmental Guard is competent for about 1,000 legislative acts, so training is important. However, due to the lack of funds, the last course was two years ago. Due to the insufficient budget, no financial resources are allocated to the professional training of the staff. Instead, the centre uses videoconferencing to reach out to counties and, at least annually, all chief commissioners gather for two to three days for an update. In NEG Brașov, training is provided by the headquarters, with staff being invited one by one to seminars. In addition, one or two meetings are held locally each year and staff have established a WhatsApp group for consulting counties on planning and laws.

The National Administration “Romanian Waters” organizes non-formal trainings for technicians on legislation and guidelines carried out by headquarters staff. Also, working groups from river basin authorities pass experience back up to headquarters.

Since 2017, the National Agency for Fishing and Aquaculture has organized three training events per year with EU funds (dropping in 2019 to two per year) to provide an update on skills with the participation of most staff.

In 2018, the Ministry of Health organized three training courses for the State Sanitary Inspection staff (256 State health inspectors and assistant health inspectors participated) within the public health control structures of the county public health departments and Bucharest municipality. Training topics included health inspection in the field of hospital healthcare, nutrition and health claims allowed to be entered on food products, and sanitary inspection in the field of biocidal products and cosmetics.

The National Agency for Mineral Resources ensures for every civil servant an annual training event of about five days. The training programme in 2019 did not include any environmental topics.

Since the academic year 2012-2013, the Ecological University of Bucharest offers one-year post-university studies in the framework of continuous professional training and development on the following three specializations: management of Natura 2000 sites; research methodology in environmental protection; and methods of investigating the quality of environmental factors.

In 2018, employees of the ministry in charge of education underwent a training on reducing food waste to raise their awareness about the global impact on food waste and its environmental impact, linked to the SDG 12
(responsible consumption and production). The training was delivered by the National Association for Consumer Protection and Promotion of Programs and Strategies in Romania (InfoCons), that is a member of the Consumers International World Organization.

**Non-formal and informal education**

Non-formal and informal education promoted by the ministry in charge of education are focussed on developing competences such as interpersonal skills and ability to work in a team, to support active participation in society and the labour market, complementing the competences acquired through formal education. Action learning, peer learning and volunteering are used as principal teaching methods in non-formal and informal education. Non-formal and informal education takes place in the country by means of extracurricular activities, Erasmus+ Programme, “School in a different way (Scoala altfel)” Programme, projects and partnerships, national extracurricular competitions, and children’s palaces (Palatul Copilului) and clubs. EE and ESD (mostly environmental and social dimensions) are integrated into non-formal and informal education to an extent depending on the type of educational activity. The most common challenge is the lack of adequate resource allocation for a better integration of EE and ESD in theoretical and, especially, practical activities. No national budget is specifically allocated for ESD. The manuals, national projects and various school competitions are financed from the budget of the ministry in charge of education.

The National Programme “School in a different way (Scoala altfel)” promotes non-formal and informal education for pre-school and secondary school students, including in the area of EE and environmental protection, by developing the ability to take decisions in a responsible way (personal choices and social interaction), by assessing the consequences of the impact of various actions on the environment. The programme last five days and can be carried out based on plans decided upon by each kindergarten or school, based on the annual curriculum. The Programme methodology is approved by a ministerial order of the Minister of National Education and Scientific Research (No. 5034/2016)\(^{105}\).

Since 2017 an awareness campaign on separate waste collection “Waste Olympiad” is held annually in the country with the support of the ministry in charge of education and county school inspectorates. At the end of the collection campaign, prizes are awarded to groups of children who collected the largest numbers of batteries, and those who collected the largest amounts of waste electrical and electronic equipment.

The ministry in charge of education has a dedicated space on ESD and SDGs on its website, containing awareness raising information and national and international documents and resources on ESD and sustainable development, including links to UNESCO ESD manual, ECE Strategy for ESD, Quality Criteria of Sustainable Development School, and the 2030 Agenda for Sustainable Development\(^{106}\). In addition, the ministry makes available information materials in support of ESD integration into teaching\(^ {107}\).

Forests month is organized in March-April every year as a result of cooperation between the General Department for Forests of the ministry in charge of the environment and the ministry in charge of education. National Parks are also contributing to promoting EE and ESD (Box 5.6)

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**Box 5.6: Piatra Craiului National Park promoting EE and ESD\(^ {108}\)**

Piatra Craiului National Park (www.pcrai.ro), including through its Visitor Centre established in 2016, is engaged in non-formal EE and ESD through its activities on raising environmental awareness, preserving local knowledge, traditions and communities and promoting sustainable mobility (cycling) and waste recycling. Such activities are carried out under the themes of Education and Awareness and Conservation of Traditions of the Park's Management Plan (www.pcrai.ro/files/pdf/Plan_site.pdf) both on the Park premises and in educational institutions of local and nearby settlements. The primary aim is to educate children to be environmentally responsible, and who will also influence the behaviours of their parents and local communities, including preserving the National Park. Raising the environmental awareness campaigns.

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\(^{106}\) www.edu.ro/educa%C8%9Bie-pentru-dezvoltare-durabil%C4%83

\(^{107}\) www.edu.ro/planuri-de-lec%C8%9Bii-edd

awareness of tourists and visitors is another focus of the Park’s activities. In 2019, the Visitor Centre had 8,000 visitors, including 2,000 children, predominantly from the lower secondary level (grades 5-8).

In addition, the environmental education schoolbook “Piatra Craiului” is used in all 11 general (primary and secondary education level) schools located in local communities and in 25 general schools of Brașov and Argeș counties. The children are included in a programme of practical educational activities (excursions, competitions, camps). Also, local children are engaged in monitoring activities (e.g., species of butterflies, bats).

These activities resulted in a continuous dialogue with members of local communities, increasing participation of children in greening activities in the Park, receiving requests from school inspectorates to expand the educational programme in other communities further away from the Park, reducing quantities of waste improperly stored by local communities in the Park’s area and improving the Park’s image in local communities.

The Administration of the National Park established partnerships with NGOs and schools and participates in joint projects. For instance, the Park is participating as one of the four pilot areas in implementing the project “Restoring and managing ecological corridors in mountains as the green infrastructure in the Danube basin (ConnectGREEN)” (2018–2021), financed by Interreg-Danube Transnational Programme. WWF Romania is the Lead Partner. Project activities includes raising public awareness and education for nature conservation. (www.pcrai.ro/proiect-connectgreen)

Project and tourist activities constitute the main funding source of the National Park.

The Eco-Schools programme in Romania, coordinated by the Carpathian-Danubian Centre of Geo-ecology (www.ccdg.ro/) since 1999, has been a real success, with nearly 300 enrolled educational institutions as at December 2019. However, the trends in the number of eco-schools show that, following an increase from 5 pilot eco-schools in 1999 to 424 in 2009, there is a considerable decrease to 295 schools in 2019.

In Brașov County there are eight eco-schools, including Brașov general school No. 25 (box 5.7).

**Box 5.7: Brașov school No. 25 – 20 years of eco-school experience**

Brașov general (primary school and gymnasium) school No. 25 maintains its “green flag” of eco-school since 2011, originally inspired by the “Let’s Do It, Romanian” campaign. Environmental activities are carried out in partnership with various actors, such as the Parents’ Committee, EPA Brașov, Local Environmental Guard, Local Public Administration of Forests and NGOs. Parents jointly contribute to pay the annual eco-school tax of €150.

The school estimates its compulsory and optional curricula to include some 25 per cent of environmental education in its primary education and 20 per cent in its lower secondary education. Given the school location in a mountain forest area, attention is paid to educate a respectful behaviour in forests.

The 25 members (each appointed for one year following submission of a motivation letter) of the school’s eco-club meet on a monthly basis. An ECO-patrol operates on school grounds and an environmental magazine is produced by pupils.

On-going environmental actions include: saving paper (25 per cent less) and, since 2015, water; sustainable mobility; planting trees (over 100 trees); and celebrating various environment-related international days and weeks (e.g., International Environment Day, International Day for the Preservation of the Ozone Layer, Earth Day, Mobility Week, Healthy and Sustainable Food Week). Since 2019 the school implements waste management through an initiative to reduce, recover and recycle, including through organizing a separate waste collection space on the school’s premises and partnering with the local waste collecting company “BRAI-CATA”. Recycled materials are used to make costumes and ornaments (e.g., for the Carnival in 2017). Children are selling such ornaments and collecting funds to support socially disadvantaged persons.

According to the Brașov school inspectorate there is a noticeable improvement in environmental awareness of children in schools in the county, which is largely due to increasing extracurricular and social activities related to environmental protection. Also, EPA Brașov organizes public debates on emerging environmental issues through its website platform.

Adult education centres include environmental protection themes in their activities. An Advisory Committee for social dialogue with the elderly is operating in Brașov, including addressing various environmental issues at almost every meeting.
According to the opinion of several environmental NGOs, public awareness on environmental matters is estimated to be at a good level, especially on the themes of forest and illegal logging and to a lesser degree on biodiversity conservation, climate change and sustainable energy. However, behavioural patterns towards sustainable choices were still lagging behind, the improvement of which requires an enhanced implementation of EE and ESD.

NGOs active in environment and sustainable development areas at national and local levels contribute extensively to promoting non-formal and informal EE and ESD. For instance, in Braşov country NGOs such as Let’s Do It, Romania (https://letsdoitromania.ro/) and Ecotic (www.ecotic.ro/), and associations Millions of Friends (https://millionsoffriends.org/) and Schools for a Green Future (https://spuvv.ro/) engage children and often parents in their activities.

Other examples of NGOs engagement in EE and ESD include the following: promoting green tourism (https://turismverde.ro/), green arts (www.greenarts.ro/), green schools (www.scoliverzi.ro/), and the activities of the Education Coalition (http://coalitiaedu.ro/).

At the national and local level, various initiatives are implemented, such as the Campaign “28 September 2019, SOS – Ambrosia” – a civic movement for environment and health to combat the invasive plant ragweed (Ambrosia Artemisiifolia) that causes allergies.

Research and development

The research, development and innovation system in Romania includes 263 public research, development and innovation organizations and about 600 enterprises. Of the public organizations, 56 are authorized public universities, 46 are national research and development institutes (of which 43 are coordinated by Ministry of Education and Research), and 65 are research institutions and centres of the Romanian Academy. The National Network for Innovation and Technology Transfer (ReNITT) comprises 50 specialised organizations: technology transfer centres, technology information centres, technology and business incubators, and four science and technology parks.

Preserving the environment is a priority of all current policies in the context of massive investments to be made in depollution and recycling techniques, in the management of water resources and wetlands. The “smart city” concept offers integrated infrastructure solutions for the needs of the population in urban agglomerations. The field of bioeconomy benefits from the huge potential of Romanian agriculture, in the context of an increasingly active and growing local food industry, of successful applied research in the field and in the pharmaceutical industry, as well as in the context of global trends such as high food demand. Food safety and optimization, the development of the horticultural, forestry, animal husbandry and fisheries sectors or the capitalization of biomass and biofuels are subdomains with obvious potential. Research in the field of energy supports the reduction of Romania’s energy dependence, through the superior capitalization of fossil fuels, the diversification of national sources (nuclear, renewable, clean), multifunctional transport (“smart grids”) and the increase of consumer efficiency.

Research and development specifically on EE and ESD is not included as separate themes in the national research programmes. Such research takes place through national and international projects, activities of the ministries in charge of education and of the environment, and as a result of NGO work.

5.5 Legal, policy and institutional framework

Legal framework

The 2005 Emergency Ordinance on Environment Protection (No. 195/2005) approved by the Law No. 265/2006, contains provisions for: access to environmental information (taking into account the confidentiality criteria in force); the right of association in environmental protection organizations; the right to be consulted in decision-making process regarding the development of environmental policy and legislation, the issuance of regulatory acts in the field, the elaboration of plans and programmes; the right to address, directly or through environmental protection organizations, administrative and/or judicial authorities, as appropriate, environmental issues, regardless of whether or not damage has occurred; and the right to compensation for the damage incurred.
Access to information on environmental matters

Two main legal acts regulate access to information on environmental matters: Law on Free Access to Information of Public Interest (No. 544/2001), and Government Decision on Public Access to Environmental Information (No. 878/2005).

The 2016 amendment to the 2001 Law established the deadline for written provision of information of public interest upon its request. Authorities have up to 5 days to send a justified refusal to provide the requested information.

The 2005 Government Decision sets the conditions, basic terms and modalities for both active and passive access to information on environmental matters as well as access to justice for the unjustified non-provision or partial provision of the requested information, which are in line with the provisions of the Aarhus Convention. The Decision establishes a deadline of up to 15 days for redirecting the request to another public authority, as appropriate, and notifying the requestee of this. Article 12 establishes the grounds for refusing the provision of information upon request, however stipulating that the reasons for refusal shall be interpreted in a restrictive sense, considering, for each case, the satisfaction of the public interest by disclosing the information. For each case, the satisfaction of the public interest by disclosure is compared with the interest satisfied by maintaining confidentiality. Furthermore, the public authorities may not refuse a request for information regarding the emissions into the environment.

Petitions are handled in accordance with the Governmental Ordinance on the Regulation of the Activity of Addressing Petitions (No. 27/2002), including the requirement for public authorities to establish a dedicated unit for public relations that will register and oversee the timely response to petitions. The public authority has up to 30 days to respond to a petition (regardless of whether a positive or negative response) and, in case for complex responses, has the possibility to extend by another 15 days (30 days for the energy sector) with informing the petitioner of such an extension.

The environmental dimension of SDG Target 16.10 (ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements), is addressed well in Romania through the adoption of national legal acts enabling free access to information of public interest and public access to environmental information, including the ratification in 2000 of the Aarhus Convention (Law No. 86/2000). Thus, the legal guarantees to public access to environmental information are in place. Pursuant to these legal provisions, all public authorities have on their websites a dedicated space for information of public interest. In addition, environmental public authorities post environmental information on their websites for active public access. Furthermore, the country has established procedures to respond to public requests for environmental information, including reasonable timeframes. Moreover, the ministry in charge of the environment developed the Public Authorities Guide for Access to Environmental Information and disseminated it widely across all public authorities, as part of its efforts to improve access to information. Overall, the environmental public authorities make reasonable efforts to promote publicly the right to information and to abide by the established procedures and timeframes to make available environmental information. Nonetheless, the trend in recent years shows an increase in public requests for environmental information and some public authorities are struggling with handling the increased demand within the mandatory timeframes. The Romanian public, including environmental NGOs, is aware of its right to environmental information and is using it. The remaining big challenge is the effective utilization by the public of its right to environmental information, as evidenced by the increasing number of court cases won by NGOs challenging the non-provision of environmental information.

Public participation in decision-making on environmental matters


The 2003 Law regulates public participation in decision-making by public authorities at all levels, including on environmental matters. The Law sets out the rules and procedures for public consultation and active participation.
in public debates organized by the public authorities, as well as in drafting normative acts. Accordingly, public authorities are obliged to inform the public, by means of mass-media and on their websites, about the draft normative act 30 days in advance of its expected approval, and set a minimum of 10 days for commenting by the public (individuals and NGOs). In case of a request from an NGO, public authorities are obliged to organize a public debate on the draft normative act within 10 days from announcing such public debates. Within another 10 days following the public debates, the authority is obliged to provide public access to the minutes of public debate, written recommendations collected, improved versions of the draft normative act in various stages of development, approval reports, as well as the final adopted version of the normative act. The Law also foresees adoption by emergency procedures provided by the regulation in force in case of exceptional circumstances in order to avoid serious harm to public interest. This clause appears to be overused by public authorities in issuing an increasing number of emergency ordinances on various issues, the development of which does not require public consultations.

The 2006 Government Decision was made in order to comply with article 7 of the Aarhus Convention setting the framework for public participation in environmental decision-making. The Decision regulates public participation in making or revising plans and programmes in the areas of waste including packaging and electronic waste, water protection against nitrate pollution from agricultural sources, and air quality. Public participation includes at least the possibility of submitting comments (within 30 days) and participating in a public debate (organized within 45 days from the end of the commenting period and an announcement of at least 30-days before it). The authority is obliged to inform the public about the manner in which the results of public participation were taken into account, and of the possibility to contest the decision at the competent court. The Decision defines the “public” as natural and legal persons (one or more) and associations, organizations or groups of these persons, regardless of their citizenship, nationality or residence (for natural persons), and regardless of the place where they are registered or where the effective centre of their activities is located (for legal persons).

In addition, public participation in decision-making on environmental matters is regulated in other laws such as the 2013 Law on Industrial Emissions (No. 278/2013), which has specific provisions on public participation in decision-making in annex 4, including the obligation of the competent authority for environmental protection, which is responsible for issuing the integrated environmental permit or environmental permit, to keep the public informed about issuing new, renewing or revising integrated environmental permits and to ensure effective participation of the public concerned in commenting and in public hearings. Furthermore, the Ministerial Order for the Approval of the Procedure for Issuing Environmental Permits (No. 1798/2007 with subsequent amendments) contains the procedure for organizing public hearings (annex 3).

Certain aspects of public access to information, participation in decision-making and access to justice in environmental matters are also regulated by legislation related to EIA, SEA and environmental permitting. For instance, the 2018 Law on Assessing the Impact of Certain Public and Private Projects on the Environment (No. 292/2018) contains an entire section establishing the modalities for public information and participation in the EIA procedure, and another section with provisions related to access to justice. According to the Law, NGOs promoting environmental protection and meeting the conditions laid down in relevant legislation are deemed to be concerned. Importantly, the Law introduced for the first time the provisions for when a request for information might affect the intellectual property rights or the confidentiality of commercial and industrial information, in which case the competent authority must interpret the reason to refuse in a restrictive manner, giving priority to satisfying the public interest by sharing the part of the information that can be made public. Also, the authorities must explain the way in which the public interest was taken into consideration.

Concerning GMOs, the Emergency Ordinance on the Deliberate Introduction into the Environment of Genetically Modified Organisms (No. 43/2007) contains provisions on public participation and access to information, in its Articles 6 and 17. Emergency Ordinance on the Use of Genetically Modified Microorganisms under Isolation Conditions (No. 44/2007), guarantees public information and consultation in the permitting procedure for activities using genetically modified microorganisms under isolation conditions (Article 20). Romania has accepted the GMO amendment of the Aarhus Convention by the adoption of Law No. 24/2008.

The environmental dimension of the SDG Target 16.7 (ensure responsive, inclusive, participatory and representative decision-making at all levels) is looked at from the perspective of the public participation in decision-making on environmental matters, for which the legislative framework and the procedure for public participation are well established in Romania. In particular, the 2018 Law on EIA, requiring the public authorities
to put the public interest above the request for confidentiality, is expected to facilitate access to information necessary for meaningful public participation. However, several challenges remain with implementing effectively on the ground the legal provisions for public participation, including adapting the procedures for ensuring meaningful public participation in times of pandemics. To support addressing the challenges, the ministry in charge of the environment developed in 2019 a strategy for improving country compliance with the provisions of the Aarhus Convention, which is expected to help the country’s efforts in improving public participation in decision-making on environmental matters. Additional concrete practical actions are yet to be developed, implemented and monitored.

Access to justice in environmental matters

Two laws that regulate access to justice, including in environmental matters, are the 2010 Law on the Code of Civil Procedure (No. 134/2010) and the 2004 Law on Administrative Litigation (No. 554/2004). In addition, the 2018 Law on EIA contains special provisions regarding access to justice during all stages of an EIA procedure. Also, the 2005 Government Decision on Public Access to Environmental Information regulates access to justice for the unjustified non-provision or partial provision of the requested information, in line with the provisions of the Aarhus Convention.

The Directive 2003/35/EC providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice is another legal act guiding Romanian activities in the areas of public participation and access to justice.

Environmental education and education for sustainable development

There is no legal or regulatory act specifically addressing the implementation of EE and ESD in formal, non-formal and informal education systems in Romania. The main law regulating education in the country – the 2011 Law on National Education (No. 1/2011) – includes the provision on the main aims of lifelong learning which are the full development of the person and the sustainable development of society. The Law does not include any specific provisions on EE or ESD.

Programmes for optional activity (e.g., “School after school”) or extracurricular activities (e.g., “School in a different way”) that can include EE and optional subjects (e.g., Ecological and environmental protection education for pre-school, primary and lower-secondary levels of education) are regulated through orders by the ministry in charge of education.

The 2005 Emergency Ordinance on Environment Protection contains provisions requiring the ministry in charge of education to ensure that curricula at all levels be adapted in order to acquire the notions and principles of environmental protection, and for environmental protection awareness, training and education; and educational programmes be elaborated in order to form a responsible behaviour towards the environment. The implementation of these provisions has been put into practice by the ministry in charge of education through optional subjects and extracurricular activities.

Policy framework

Environmental democracy

To implement the decisions on compliance by Romania with the provisions of the Aarhus Convention, the ministry in charge of the environment prepared in July 2019 an implementation strategy — the Strategy for the implementation of the provisions of Decision VI/8h regarding Romania's compliance with the requirements of the Aarhus Convention — the draft109 of which underwent public consultation. The Strategy aims to guide normative activities identifying measures needed to improve the existing legislation to ensure meaningful and effective public participation in the process of issuing of agreements, permits, licenses or authorizations, and the development of new normative acts. Improving the understanding of civil servants and staff at central and local levels on the importance to comply with the provisions of the Aarhus Convention is another objective of the

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Strategy. In addition, the Strategy aims at collecting and monitoring the requests received regarding access to information on environmental matters. As at September 2020 it is not clear whether the Strategy was finalized or not, given that the final version is not yet made available on the website. Plans to monitor and report on the progress in implementing the Strategy are yet to be developed.

In addition to the Strategy, a Public Authorities Guide for Access to Environmental Information was developed in 2019 and published in 2020. The primary aim of the Guide is to inform and develop the capacity of civil servants involved in the procedure of responding to public requests for environmental information. As at October 2020, the electronic version of the Guide was disseminated through the website of the ministry in charge of the environment. The ministry reached out to other public authorities at central and local levels encouraging them to make available the Guide on their websites. Printed copies are disseminated at the premises of the ministry and by sending them to other public authorities for distribution to their constituencies.

There is no other policy document related to access to information, public participation in decision-making and access to justice in environmental matters. These issues are implemented mostly through laws and regulations (see section above).

Environmental education and education for sustainable development

As at December 2019, there is no strategy, action plan or other policy document specifically focussed on concrete strategies, plans and actions to implement EE and ESD in formal, non-formal and information education in Romania.

The National Strategy for the Sustainable Development of Romania 2030 (Government Decision No. 877/2018) mentions ESD as a form of education that should become an integral part of all quality education and inherent to the concept of lifelong learning; the Strategy includes the related SDG targets.

The 2018–2020 Governing Programme mentions explicitly EE and ESD as part of its activities to increase participation in quality education, including by supporting extra-curricular educational policies that complement the approved school curricula and ensure the implementation of health education, civic education, cultural artistic and scientific education, ecological education, sports education, road education, and education for sustainable development.

Several other strategies, programmes and plans (e.g., Romanian Vocational Education and Training Strategy for the period 2016–2020, Strategy on reducing early school leaving in Romania, National Strategy for Tertiary Education 2015–2020, National Lifelong Learning Strategy 2015–2020, and National Strategy for Research, Development and Innovation 2015–2020) contain, to a various extent, issues related to sustainable development themes; however, none explicitly mentions concrete strategic directions or activities regarding EE or ESD.

The Recommendation 3.2 made in the Second EPR of Romania was not implemented as at December 2019. In it the Government was advised to: (a) adopt a national strategy on education for sustainable development and its national implementation plan, as recommended by the ECE Strategy for Education for Sustainable Development; and (b) ensure that adequate funding is made available for its implementation.

The National Strategy for Research, Development and Innovation 2014–2020 (No. 929/2014) identifies strategic areas of activities in the field of energy, environment and climate change and bioeconomy.

Subprogramme 5.4. Research, development and innovation program for rivers, deltas, seas “DANUBIUS” of Programme 5 “Research in areas of strategic interest” under the National Plan for Research, Development and Innovation 2015–2020, served as a framework for management support projects from May 2018 until June 2019110.

Achieving SDG target 4.7 (by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global

citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development), and target 12.8 (by 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature), is measured through the same global indicator looking at the “extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment”. Romania is integrating EE and, to some extent, ESD (environmental and social dimensions mostly) in optional curricula and in non-formal and informal education and mostly as a result of project-based activities. As such, neither EE nor ESD is mainstreamed into national educational policies. Likewise, EE and ESD are not integrated as compulsory courses in the education of future teachers or the in-service training of teachers. At the same time, the ministry in charge of education is promoting the integration of sustainable development themes and SDGs in schools’ activities and has developed a dedicated space on its website with information related to ESD and SDGs. The Department for Sustainable Development plans to introduce a new occupation in the Romanian Classification of Occupations – expert for sustainable development – with support from the ministry in charge of labour. The ministry in charge of the environment provides information on environmental protection on its website. The mass media resources focused on environmental protection contribute to promoting EE and ESD through the informal education (section 5.1).

Institutional framework

Environmental democracy

There are no significant changes since 2012 in governance, institutions and bodies that relate to public access to information, participation in decision-making and access to justice in environmental matters.

The main environmental authorities with responsibilities in enabling public access to information on environmental matters are: the ministry in charge of the environment (Ministry of Environment, Waters and Forestry, as at September 2020), the National Environmental Guard, the National Agency for Environmental Protection (NEPA) and its 42 Local Agencies for Environmental Protection (LEPAs), the National Meteorological Administration, the National Agency of Natural Protected Areas, the Danube Delta Biosphere Reserve Authority and the Environment Fund Administration.

In addition, except for bodies or institutions acting in a judicial or legislative capacity, all other authorities in possession of environmental information of public interest are required to grant access to the public. Each public authority is expected to establish within its structure a unit of public relations in charge of handling requests for environmental information from the public, including keeping a dedicated register of such requests. Monthly reporting of requests received and responded to, is required up the hierarchy until the level of the main central authority. For example, NEPA keeps national statistics based on reports from all LEPAs and publishes it on its website.

NEPA’s legal office takes care of requests related to legal issues, including comments made on draft legal acts. NEPA’s development of the Integrated Environmental Information System, which ensures the collection and processing of environmental data in a standardized format from areas under the responsibility of LEPAs and NEPA in order to report to various international and European bodies contributes to the institutional framework enabling on-line access to such information. In addition, the system serves as an interface for on-line submission of requests for information.

The current resources allocated both in the ministry in charge of the environment and in NEPA and 42 LEPAs are insufficient to ensure a good implementation of access to information, public participation in decision-making and access to justice in environmental matters, especially concerning complex technical issues. The staff is often overworked dealing with multiple issues and requests in parallel, which delays sometimes the provision of timely comprehensive responses to requests for complex information.

Also, within LEPAs there are only minimal units which cover the field of public relations, and the activity in the field of sustainable development (developing, implementing and monitoring of local environmental action plans or regional environmental actions plans) is provided by a single staff member, who has many other duties in the job description, being at the same time staff of monitoring departments, laboratory, etc. Another challenge to maintain staff with a high level of expertise in NEPA and LEPAs are the salary conditions, which are inferior to
other structures in the public administration, and therefore discourage the entry into the system and keeping experienced staff. High staff mobility affects the maintenance of adequate level of expertise and performance.

Since its establishment in 2016, the National Agency for Natural Protected Areas (ANANP) (http://ananp.gov.ro/) aims to better unifying the administration of protected natural areas.

The National Emergency Preparedness Platform (https://fiipregatit.ro/) provides first aid guidelines and general education regarding emergency situations such as natural disasters (heatwaves, floods, earthquakes, fires, tornados). It is the official source of information for the public about safety measures and emergency response.

Ombudsman work on protecting the right to a healthy environment is carried out by the Department on Human Rights, Equality of Opportunity between Men and Women, Religious Cults and National Minorities, which has six staff (State Secretary, counsellors and experts) including one counsellor working on the environment in addition to other tasks. The Ombudsman’s 14 territorial offices have only legal experts of general competences.

EPA Braşov’s unit on public relations and mass media communications oversees handling public petitions and complaints. EPA is conducting information and awareness-raising campaigns, such as the Forest Month taking place annually from 15 March to 15 April and serves as an interface by helping the Environment Fund Administration to disseminate information, for instance about the Rabla programme. In addition, EPA Braşov is cooperating with universities, schools and NGOs through partnerships, such as certifying graduates of the two Braşov colleges with environmental specializations and participating in 2016–2018 in a multistakeholder project “Green Path towards Sustainable Development” in cooperation with EPA Sibiu.

Environmental education and education for sustainable development

Since 2012, no significant changes occurred in the institutional framework related to EE and ESD. Dedicated institutional structures or bodies specifically working on EE and ESD (e.g., departments, divisions, units) within public authorities in charge of education or of the environment are still lacking.

The Ministry of Education and Research and subordinated institutions at national and local levels (https://www.edu.ro/structuri-subordonate), are the main public authorities in charge of education. The Ministry is the main authority to report on ESD and is among those designated public authorities to implement the ECE Strategy for ESD. In addition, the Ministry organizes and leads the national system of scientific research, technological development and innovation, consisting of all units and institutions of public and private law with legal personality, which have research and development in their activity. EE and ESD are integrated in the Ministry relevant activities to a various extent, mostly in the area of optional and extra-curricular activities and non-formal and information education. The funding of school’s activities, including those on EE and ESD, comes from the state budget (based on per capita financing), budget of local authorities, programmes with national or EU funding, and sponsorships. In addition, other financial sources include the European Financial and Investment Funds, the European Economic Area grants, ERASMUS+, the Swiss-Romanian Cooperation Programme and other donors.

The Ministry of Environment, Waters and Forests and subordinated institutions at national and local levels are the key institutions promoting EE and ESD and working in partnership with the ministry in charge of education.

The Department for Sustainable Development (http://dezvoltaredurabila.gov.ro/) established in 2017 under the Prime Minister’s Office has a role of liaison institution, including for promoting ESD.

Environmental and educational NGOs are involved in promoting EE and ESD and in carrying out practical activities for environmental protection and sustainable development. One such example is the Carpathian-Danubian Centre of Geocology (www.ceedg.ro), established in 1996 and since 20016 a full member of the Foundation for Environmental Education, that promotes sustainable development and focuses on EE. The Centre coordinates the implementation of five international programmes in Romania (ECO-Schools, Learning about Forests (LeAF), Young Reporters for the Environment (YPE), Blue Flag, and Green Key), two national projects (Eco Photography of the Year, and Partnership in environmental education), one national initiative (Green Day of Eco-Schools in Romania) and three national competitions (“Valorizing waste, we save our environment and health”, “Friends of the Forest” and “National Eco-site Contest”).
5.6 Assessment, conclusions and recommendations

Assessment

Environmental democracy

Access to information on environmental matters

Since 2012 the main achievements in access to information on environmental matters included the development of the Integrated Environmental Information System by NEPA as a tool to enhance the availability of information accessible on-line. Using the system requires registration, which does not support an open access to environmental information. Also, NEPA encounters difficulties in adequately maintaining the technical infrastructure of the system that requires continuous high maintenance in order to function smoothly.

Publishing in 2020 the Public Authorities Guide for Access to Environmental Information with the aim to inform and develop the capacity of civil servants involved in the procedure of responding to public requests for environmental information, and disseminating broadly to public authorities at central and local levels, is another key achievement by the ministry in charge of the environment. The planned training events for the public authorities would help them to understand better the provisions of the Guide. Considering the shortage in the public budget for training activities, an on-line training module mandatory for all staff and civil servants dealing with requests for environmental information from the public, which would improve effective access to information, is not available yet.

Access to environmental legislation is well provided on the government legal portal http://legislatie.just.ro/, as well as on the website of the ministry in charge of the environment and subsidiary institutions, albeit not always the latest consolidated version, a challenge to be addressed.

The provisions of the 2018 Law on EIA, enabling the public authorities to provide more information to the public by putting public interest above the requests for confidentiality from the beneficiaries, is another important development in access to information and remains to be implemented in practice.

The biggest challenge in access to information is the discrepancy between the large amount of information provided on the website and the actual needs from the public for specific environmental data on emissions into air, discharges into water and forests management plans by State and private operators, which are not readily available.

Thus, on one hand, the websites of the environmental public authorities provide a lot of information, even though the information is often of an awareness-raising or educational nature, frequently not up to date and not easy to find from the home page. The development of the Public Authorities Guide for Access to Environmental Information is a clear indication that the environmental public authorities are trying to improve public access to information.

On the other hand, the increasing number of court cases filed by environmental NGOs challenging, successfully, the decision of non-provision of requested environmental information by the environmental public authorities and State enterprises is clear evidence that the currently established practice in the area of access to environmental information is not working adequately.

Public participation in decision-making on environmental matters

Concerning public participation, since the conduct of the Second EPR in 2012, there was no major change in the organization of public participation in decision-making on environmental matters. The exception since 2018, with the adoption of the new Law on EIA, is the requirement for public authorities to make available on their website in electronic format for the public all relevant information related to a request for an environmental agreement, as well as the requirement to consider public interest above the request for confidentiality from project beneficiaries, by revealing and providing information that can be separated from those items or issues that are restricted. In addition, the continuing development of the Integrated Environmental Information System by NEPA
contributed to a better on-line access to environmental information needed for the public participation, though the technical equipment for the system needs upgrading to address the frequent unavailability of the website.

Overall, the procedures for public participation in decision-making on strategic planning and legislation are well established with public authorities making available on their websites draft documents (mostly for 10 days only, which is the minimum prescribed by law) enabling the public to submit comments. The E-Consulting platform (http://e-consultare.gov.ro/) established in March 2019 is a useful platform expected to facilitate public access to information across all public authorities for public consultation. Nonetheless, some NGO representatives believed that their comments were not properly considered, if at all, in the final version of documents.

In other areas of public participation (projects, permitting) environmental public authorities are making efforts to comply with the legal provisions in force and enable public participation. From the NGOs’ point of view, more pro-active measures and efforts from the authorities at all stages of public participation in decision-making on environmental matters are necessary in organizing public participation in a meaningful and effective way. Also, proceedings from the public hearings are not made available on-line.

In 2020, during the COVID-19 pandemic, the ministry in charge of the environment and its subsidiary institutions informed the public that it should submit all requests and comments via electronic means. NEPA continued to organize several public hearings in person. No information is available on whether any public hearings took place in different formats, including by virtual means, or by telephone, or in a hybrid version.

A positive development is the elaboration by the ministry in charge of the environment of a strategy for the implementation of the provisions of Decision VI/8h regarding Romania's compliance with the requirements of the Aarhus Convention, the implementation of which is expected to address normative, strategic and organizational issues. In addition to implementing the strategy, a process to monitor and report annually on progress achieved on each component of the strategy is not yet established.

The Environment Fund Administration is running two programmes under which environmental NGOs can benefit from financial support for upgrading their vehicles to less-polluting types. Environmental NGOs can also partner with public authorities to participate in awareness-raising activities in the area of waste separate collection and recycling. At the same time, programmes for financing in environmental protection, specifically targeting environmental NGO participation, are lacking. Also, environmental NGOs (except one representative of an NGO serving on the Advisory Board) are not involved in the decision-making on priority actions for spending environmental funds.

**Access to justice in environmental matters**

In the area of access to justice in environmental matters, no major changes have been made since the Second EPR in 2012. Access to justice increased its visibility in the 2018 Law on EIA, which has specific provisions in a separate chapter on access to justice. Accordingly, the public concerned (including environmental NGOs) can challenge on procedural or substantive grounds a decision or an omission of the competent public authority that is subject to public participation, including an approval for development, in line with the provisions of the 2004 Law on Administrative Litigation (No. 554/2004).

Many court cases in environmental matters are filed by NGOs, mostly challenging the non-provision of requested environmental information by public authorities and State enterprises, many of which are ruled in favour of NGOs. Environmental cases in courts, lasting 2–3 years, drain financial and time resources of NGOs that could be spent otherwise for environmental protection activities. Enforcing compliance with the court decision remains a challenge. Also, the environmental information originally requested becomes obsolete during such a long period and no longer serves the original purpose.

Courts do not have judges specialized in environmental cases or experts specialized in environmental law. Some universities provide optional courses on environmental law for students of legal faculty, however, reportedly, such courses were not of high priority for students.

**Environmental education and education for sustainable development**
EE and, to some extent, ESD are integrated into the formal education system through the optional curriculum, civic education and extra-curricular activities, as well as in the compulsory curriculum at the initiative of each teacher and responding to rising interest of students in issues such as climate change, plastic pollution, human rights, global warming, overpopulation and renewable energies.

Public authorities in charge of education and of the environment are carrying out many activities to promote environmental protection and sustainable development, and to some extent EE and ESD. Environmental and other NGOs are leading in non-formal and informal EE and ESD. Many of these activities are done through national and international projects. Several national strategies and programmes mention issues related to environmental protection and sustainable development, and in a few cases refer explicitly to EE and ESD.

At the same time, a comprehensive strategy dedicated entirely to EE and/or ESD, providing a strategic framework to all on-going and future activities and accompanied by a plan of concrete actions with deadlines, funds needed and budgetary sources, as well as a monitoring mechanism to measure regularly progress in implementation, are still lacking in the country.

Relevant Sustainable Development Goals Targets

Romania is progressing well towards achieving the SDG targets relevant to environmental democracy (targets 16.3, 16.7 and 16.10) and has several challenges to be addressed for reaching a good performance by 2030. The country carries out activities towards achieving the SDG targets relevant to ESD (targets 4.7 and 12.8), however mostly based on optional approaches without a coherent strategic and policy framework and a mechanism to monitor, report and assess progress in embracing ESD in the education system.

Relevant recommendations from the Second Environmental Performance Review

Romania has mixed progress in implementing recommendations from the Second EPR conducted in 2012 with the recommendations 2.4 and 3.2 not implemented and recommendation 3.3 partially implemented. The full implementation of all three Recommendations remains pertinent for the current EPR.

Conclusions and recommendations

Public access to information on environmental matters

The more environmental information is provided free on-line (active access), the fewer requests for information will be received (passive access). Expanding, modernizing and further developing the Integrated Environmental Information System, and making all information therein accessible on-line free of charge to the public, would help improve timely access to pertinent environment information, both on the state of the environment and on environmental matters. Development of similar systems in other public authorities is required as a priority for the next several years. Romania’s expertise in information technologies is world renowned and could be used to support upgrading and further developing the Integrated Environmental Information System in the most innovative and user friendly way, including by engaging Romanian universities preparing IT specialists, or launching country-wide contests for the best information system IT infrastructure.

Training and capacity development of staff is needed. However, during the last several years no resources were allocated for in-service training of staff in the ministry in charge of the environment and NEPA. Training on access to information on environmental matters is also needed for public authorities in charge of various economic and other sectors. Recognizing the urgency to improve effective access to information, and taking into account the shortage in the public budget for training activities, efficient solutions are required, such as developing an on-line training module and making it mandatory for all staff and civil servants dealing with requests for environmental information from the public.

In addition, enhancing active access to environmental information would be expected to decrease the pressure and address challenges related to passive access to such information. Making available more environmental information freely accessible on-line would be expected to decrease the number of in-coming requests for information and release the time of staff for other activities. Increasing active access would also solve the challenge of timely accessibility of information, thereby supporting the public participation pillar.
Access to environmental legislative acts is hindered sometimes by the lack of the latest consolidated version.

Romania is on a good path towards achieving SDG target 16.10 and addressing promptly the remaining challenges would support country efforts to reach the target by the established deadline of 2030.

**Recommendation 5.1:**
The Government should:

(a) Take the necessary administrative and practical measures to ensure that public officials:
   i. Respond to the public’s requests for information on environmental matters within the established deadlines and, in case of a refusal, to state the reasons for the refusal, and to monitor that these reasons are in line with the legislation in force;
   ii. Interpret the grounds for refusing access to information on environmental matters in a restrictive way, considering the public interest served by disclosure, and in stating the reasons for a refusal to specify how the public interest served by disclosure was considered, including applying into practice the related provisions of the 2018 Law on Assessing the Impact of Certain Public and Private Projects on the Environment;
(b) Provide adequate financial resources to ensure training and capacity-development activities for enhancing the knowledge and practical application of access to information on environmental matters;
(c) Promote and support the establishment of integrated systems of information on environmental matters in all areas of activity, linking them into a portal of information and making that portal accessible for the public on-line and free of charge;
(d) Establish a penalty for the repeated non-provision of information on environmental matters on the same issues, especially when there are court decisions in favour of the public challenging the non-provision of information.

**Recommendation 5.2:**
Public authorities in charge of the environment should:

(a) Continue to implement the “Strategy for the implementation of the provisions of Decision VI/8h regarding Romania’s compliance with the requirements of the Aarhus Convention”, and set up a mechanism to monitor its implementation and prepare annual reports on progress achieved, making them available on-line;
(b) Develop a guide on interpreting the provisions of various national legal acts regarding confidentiality, intellectual property or commercial secrecy of information in line with the definition and scope of information on environmental matters set out by the Aarhus Convention;
(c) Upgrade, further develop and maintain the Integrated Environmental Information System, including allocating adequate financial support for modernizing the System’s infrastructure and exploring the possibility to involve universities in the development of an innovative system;
(d) Develop and promote an on-line training module for access to information on environmental matters and make it mandatory for all civil servants and staff involved in public communication and relations;
(e) Support other public authorities in possession of information on environmental matters to adapt the training module for their areas of activity;
(f) Improve the on-line provision of up-to-date consolidated versions of legal, regulatory and normative acts to include all amendments made since their original adoption.

**Engaging environmental NGOs in projects on environmental protection**

Including one member of an environmental NGO in the Advisory Committee of the Environment Fund Administration is a positive development. At the same time, representatives of environmental NGOs are not consulted and engaged in establishing and running programmes for financing activities in various areas of environmental protection, especially those of emerging concern.

The Environment Fund Administration can do much more to support the engagement of environmental NGOs in environmental protection activities. For instance, special programmes could be set up to support running small and medium-sized projects in various areas of environmental protection and awareness-raising. In addition, a
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special programme to work with eco-schools (enabling them to apply for small grants), supporting their activities to developing and maintaining eco-friendly approaches and “greening” the school premises, could be initiated.

**Recommendation 5.3:**
The ministry in charge of the environment should:

(a) Consider establishing effective mechanisms for the involvement of environmental stakeholders in decision-making on the use of funds of the Environment Fund;

(b) Ensure the Environment Fund Administration considers schools as potential applicants for support, when drafting new environment awareness programmes.

**Public participation in decision-making on environmental matters**

The implementation on the ground of the strategy for the implementation of the provisions of Decision VI/8h regarding Romania's compliance with the requirements of the Aarhus Convention, are missing a process to monitor and report annually on progress achieved on each component of the strategy (normative, strategic and organizational).

The increasing number of emergency ordinances, especially since 2016, the adoption of which does not foresee public participation, is a worrisome trend in development.

Given that Romania is Party to the Aarhus Convention, the COVID-19 special measures and adaptations in the national procedures for access to information, public participation in decision-making and access to justice would need to be revised as needed and further adapted and developed in line with the “Statement on the application of the Aarhus Convention during the COVID-19 pandemic and the economic recovery phase” adopted on 2 September 2020 by the Compliance Committee under the Aarhus Convention. In particular, the Compliance Committee recommendations on holding of public hearings on decision-making under the Convention during the COVID-19 pandemic, through video-conferencing or other virtual means, would require additional implementation efforts to result in effective public participation.

Furthermore, in times of pandemics, such as the COVID-19 one, organizing public hearings would require adaptation to ensure that the public has safe conditions to participate in hearings. In such times, continuing to organize public hearings in person as per the usual procedure might result in the public concerned not attending for safety reasons. Feasible formats would require to be explored in line with the recommendations of the Aarhus Convention Compliance Committee. Depending on the specificity of the region where the public hearing takes place, different approaches can be applied or a combination of approaches. Most importantly, public hearings do not need to be organized just for the sake of meeting the legal requirements and providing evidence that they took place as part of a portfolio of documents, but rather to actively engage the public and benefit from their comments and to seriously consider them in relevant processes. By taking such an approach all parties would be winning, but most importantly a healthy environment and nature will be preserved for future generations.

The public is not provided with an opportunity to comment on the position of the Romanian Government on key topics of discussion at international meetings. Representatives of environmental NGOs are not included in national delegations to international meetings.

Romania committed to achieving SDGs, including the SDG target 16.7 (ensure responsive, inclusive, participatory and representative decision-making at all levels) by 2030 and is progressing well, albeit several issues require to be improved. Timely action to address remaining challenges would help the country towards a successful implementation of the SDG target by 2030.

**Recommendation 5.4:**
The Government should:

(a) Ensure in practice that public officials provide reasonable time frames, commensurate with the nature and complexity of the document undergoing consultation, for the public to become acquainted with draft strategic documents on environmental matters and to submit their comments;
(b) Enable the provision of adequate information and training on meaningful public participation in decision-making on environmental matters to civil servants of public authorities at central and local levels;

(c) Develop a guide to interpret the legal provision for emergency ordinances in a restrictive manner, with a view to diminish their elaboration to an absolute minimum, in order to ensure the participation of the public and other stakeholders in the development of legal, regulatory and normative acts on environmental matters.

**Recommendation 5.5:**
The ministry or ministries in charge of the environment, water and forests should:

(a) Revise and adapt the existing procedures for public participation in decision-making to ensure effective public participation in times of pandemics;

(b) Ensure effective participation of the public and NGOs in decision-making on environmental agreements and international processes and commitments, and in the preparation of national reports and other substantive inputs on their implementation;

(c) Consider including representatives of relevant environmental NGOs in national delegations participating in international environmental processes.

**Public access to justice on environmental matters**

Courts do not have judges specialized in environmental cases or enough experts specialized in environmental law.

NGOs are not eligible for legal aid provided by the State. Pro-bono legal aid in the environmental area is mostly received from national and international NGOs, associations and foundations.

The enforcement of court rulings in environmental matters, in cases won by NGOs, is lagging behind. The duration of court cases in environmental matters is 2-3 years on average, which is too long for a meaningful outcome that would still be relevant for the NGOs, as information requested becomes obsolete, projects go ahead, and laws and policies are adopted.

Achieving the environmental dimension of SDG Target 16.3 (promote the rule of law at the national and international levels and ensure equal access to justice for all) by 2030 would depend on the timely response to tackle remaining challenges in that area.

**Recommendation 5.6:**
The Government should:

(a) Increase the capacity to address environmental cases within existing judicial authorities and by organizational adjustments, such as the creation of dedicated environmental courts or environmental divisions within existing courts;

(b) Enable and conduct training courses for public authorities and judicial institutions to develop their capacity on access to justice in environmental matters in line with the Aarhus Convention;

(c) Explore options to decrease the duration of legal cases in environmental matters;

(d) Consider enabling the provision of legal aid for environmental NGOs;

(e) Exempt from court fees NGOs challenging decisions, acts or omissions by public authorities and State enterprises regarding environmental matters;

(f) Establish procedures to enforce rapidly the implementation of court decisions in environmental matters.

**Environmental education and education for sustainable development**

EE and, to some extent, ESD are integrated into the formal education system through the optional curriculum, civic education and extra-curricular activities, as well as in the compulsory curriculum at the initiative of each teacher.
Despite all efforts made by the ministries in charge of education and of the environment, a comprehensive strategy dedicated entirely to EE and/or ESD, providing a strategic framework to all ongoing and future activities, accompanied by a plan of concrete actions with deadlines, funds needed and budgetary sources, as well as a monitoring mechanism to measure regularly progress in implementation, is still lacking in the country.

Romania’s timely action to address concerns in making ESD mandatory in the country education system, including integrating ESD in compulsory curricula, would support country’s efforts in advancing towards reaching the SDG Targets 4.7 (by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development) and 12.8 (by 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature).

Recommendation 5.7:
In support of achieving by 2030 the global SDG targets 4.7 and 12.8, the Government and the ministry in charge of education should:

(a) Develop in cooperation with stakeholders, including academia and environmental NGOs, a national action plan with short-, medium- and long-term actions to support the implementation of national and international strategies related to ESD (until the end of 2022), and implement, monitor and report annually the progress achieved in the country;
(b) Establish units in charge of EE and/or ESD in relevant public authorities in charge of education at the central level and designate persons responsible for EE and ESD at local level;
(c) Establish compulsory subjects on environmental protection in the lower secondary education and introduce a compulsory course on ecology for upper secondary students;
(d) Make mandatory the integration of ESD and sustainable development themes across curricula;
(e) Include courses with compulsory EE and ESD themes in the study programmes of future teachers and in in-service training of working teachers;
(f) Establish a new speciality on EE and ESD with a view to educate national specialists in these areas, who would work in education departments;
(g) Encourage pedagogical institutions and universities to establish departments on EE and ESD with a view to conduct research and develop EE and ESD in the country and attract students;
(h) Make available adequate financial resources for enabling EE and ESD at all levels;
(i) Promote and support eco-schools.
PART II: DOMESTIC – INTERNATIONAL INTERFACE
Chapter 6

IMPLEMENTATION OF INTERNATIONAL AGREEMENTS AND COMMITMENTS

6.1 General priorities for international cooperation related to the environment and sustainable development

The main priorities of international cooperation on environment are: (i) enhancing the collaboration with the EC and with the EU Member States; (ii) maintaining and strengthening the cooperation with neighbouring countries, the Western Balkans countries and countries in the wider Black Sea region; (iii) enhancing a higher profile in the negotiations of global and regional agreements to which Romania is Party; and (iv) demonstrating good performance in the attainment of goals and targets set by the Agenda 2030 for Sustainable Development and climate change global activities.

The Recommendation 4.1 made in the second EPR of Romania asked the Government to develop a strategy for international cooperation based on national environmental priorities, clear objectives and a realistic time schedule for their achievement. The recommendation was not implemented and no strategy containing those elements was drafted. However, a set of areas that are more priority than others can be extracted from main strategic documents adopted by the Government, such as the Sustainable Development Strategy.

Romania is fully committed to the implementation of the 2030 Agenda. In 2018, a third “edition” of the SDS 2030 was approved establishing the framework for implementing the 2030 Agenda and providing a roadmap for achieving the 17 SDGs.

The Romanian Presidency of the Council of EU, exercised during the first semester of 2019, defined four main strategic areas, including “Europe of Convergence” with priority goal “fighting climate change and promoting sustainability”, which testifies to the relevance attributed by the country to these two subjects.

The OECD accession objective is also influencing considerably the international agenda in Romania, including on environment because one of the main vectors of this candidacy is the gains in reputation and credibility in the international scene.

6.2 Global and regional agreements

Full transposition and implementation of the Acquis Communautaire have been at the forefront of Romania’s purposes and concerns after the accession and even more in the last two years when transition periods, granted to the country at the time of accession, have ended. EU has been the main driver behind Romania’s rapid lead in substantially improving and strengthening its political, legislative and regulatory framework that responds to international obligations.

Participation and reporting

Romania became Party to main global and regional multilateral environmental agreements (MEAs) prior to its accession to EU in 2007 and has rapidly ratified the most recent MEAs, such as the Minamata Convention, the Paris Agreement and the Nagoya Protocol (annex I). It has implemented almost all the Protocols of the Framework Convention on the Protection and Sustainable Development of the Carpathians and has ratified the Protocol on Sustainable Agriculture and Rural Development in July 2020.

Efforts have been made by Romania to comply with its international reporting obligations; in some cases, however, the deadline for sending the report has not been met (e.g., the submission of the sixth national report to the Convention on Biological Diversity is pending since December 2018). When reporting to MEAs or non-binding processes implies collection of data, often requiring complex and expensive software, the country faces
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problems due to the maintenance costs of the hardware and software and the need for trained personnel, which it is difficult to retain.

Romania is usually represented at the most relevant meetings of MEA decision-making bodies, although participation is not completely regular, mainly due to financial constraints and turnover of personnel. When more than one competent authority or focal point have been identified for a given MEA or process, attendance at meetings depends on the topic discussed and on resources available.

However, the implementation of the Recommendation 4.2 made in the second EPR of Romania recommended the Government to provide an appropriate number of qualified staff to ensure the implementation of obligations under MEAs by increasing absorption of relevant EU funds devoted to strengthening capacity-building and to supporting the training of professionals, is in progress. Significant investment was made with the support of cohesion policy funds in the training of civil servants during the 2014–2020 programming cycle. Strengthening the training and qualifications of civil servants requires continuity in training and an adequate assessment of the needs of public entities and their resources.


The country is not participating in the activities of the European Environment and Health Process.

Romania had taken on leading responsibilities in governance bodies in several international processes, such as serving as Chair of the nineteenth session of the United Nations Commission for Sustainable Development (2011) and Vice-President of the Governing Council of the United Nations Environment Programme (2012) and of the United Nations Environment Assembly (2014–2016). Romania was Vice-Chair to the Bureau of the Implementation and Compliance Committee of the Minamata Convention (2017–2019) and Chair in the subsequent mandate. In addition, in 2019, Romania chaired the Joint Expert Group on Water and Industrial Accidents of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the Convention on the Transboundary Effects of Industrial Accidents.

Representatives of non-governmental organizations (NGOs) are never included in the Romanian delegations to MEAs’ meetings of parties, conferences of parties; neither are they involved in the preparation of country position for international meetings. NGOs are sometimes involved in the preparation of national reports on implementation of MEAs (e.g., the Carpathians Convention at the invitation of the Convention secretariat).

Conservation and sustainable use of biodiversity and nature

Convention on Wetlands of International Importance Especially as Waterfowl Habitat

Romania has been Party to the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention) since 1991. As at August 2020, 20 sites are designated as Wetlands of International Importance (Ramsar Sites), with a surface area of 1.176 million ha, 11 of which have been designated in 2012 and 2013.

Following a request by Romania and Bulgaria expressing their wish to cooperatively manage the three wetlands, which are part of the Lower Danube Green Corridor, located on both sides of their borders (Lake Calarasi/Srebarna, Suhaiia/ Belene Islands Complex and Bistret Ibisha Island), the three Ramsar sites were recognized as Transboundary Ramsar Sites in 2013.

Since 2012, other main achievements of the Convention’s implementation in the country are: (i) development of an integrated management plan and ecosystem services assessment for the Danube Delta Biosphere Reserve; (ii) strong engagement in the Carpathian Wetland Ramsar Regional Initiative “Ramsar Culture Network Development in the Carpathian Region” through the project “Conservation of the Natural and Cultural Heritage in Wetlands”; (iii) participation in the Ramsar Regional Initiative on Black and Azov Seas Coastal Wetlands (BlackSeaWet); (iv) continuity and increasing care in organizing annually the World Wetlands Day; (v) increasing national awareness of the importance of wetlands; and (vi) a greater concern for conservation of wetlands as key components of the global life support systems that maintain quality of life and sustain societies and economy.
In 2015 Romania celebrated 25 years of professional management of the Danube Delta, marked by three different distinctions: designation as a Biosphere Reserve - under the Man-and-the-Biosphere Programme of UNESCO – in 1990; designation as a Ramsar Site in 1991; granted the European Diploma for exemplary management of a protected area to the Romanian part of the Danube Delta, in 2000, by the Council of Europe.

In the absence of a specific policy framework for wetlands, the National Strategy and Action Plan for Biodiversity Conservation, prioritising the protection and restoration of wetlands and sustainable use of their resources, serves as policy tool. The National Management Plan for the Danube Basin, containing objectives and quality standards for the protection and conservation of aquatic species, is another valuable policy tool for wetlands management.

Fifteen Ramsar sites have a management plan but not all are being implemented and an assessment of their effectiveness was never carried out, although some conclusions can be drawn from the monitoring of Natura 2000 Sites given that all Romanian Ramsar Sites overlap with the Natura 2000 network by at least 90 per cent.

Romania is facing several challenges in the implementation of Ramsar Convention, which derive from increasing pressure on all types of wetlands from economic activities; insufficiency of funds to support conservation activities; increasing environmental pressure because of climate change; insufficiency of human resources; the lack of public awareness on the importance of wetlands and, in particular, the extreme difficulty to accept any kind of restrictive measures by concerned users.

The main priorities for the implementation of Ramsar Convention are finalising the extension of an existing site (Dumbravita Fish Pond); developing the missing site-specific management plans; continuing to support regional initiatives; and cooperating, coordinating and harmonising implementation activities with other MEAs.

**Convention on International Trade in Endangered Species of Wild Fauna and Flora**

Romania became a Party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1994. Romania has reported relatively constant or steady increases in permit issuance over the last five years, after a significant increase in 2009 and 2010. Export quotas were established by Romania in accordance with the procedure laid down by the Conference of the Parties for the grey wolf (*Canis lupus*), wildcat (*Felis silvestris*), European lynx (*Lynx lynx*), brown bear (*Ursus arctos*), and medicinal leech (*Hirudo medicinalis*), on a yearly basis between 2012 and 2017. No export quotas were established for 2018 and 2019.

Processing and accessibility of information and enforcement level are weak points of the existing CITES trade control system. For instance, information on CITES administrative measures (such as fines) that could be imposed is not made available to all relevant national authorities in Romanian language. Although an assessment of the effectiveness of CITES-related enforcement measures was never conducted, the weaknesses in terms of information – an example being that access to the CITES permits database has not yet been given to the Romanian Customs Administration – harm the efficiency of the whole system. Since 2012, annual and biannual reports in word and excel format have been prepared for transmission to the CITES Secretariat and European Commission as a duty under provisions of CITES Convention and European Union Regulations. These reports are expected to be published on the Ministry of Environment, Waters and Forests website for consultation.

strengthening the enforcement of existing legislation and acting collectively to ensure a coherent and unified national approach to CITES implementation are the main challenges ahead.

Romania’s effort to achieve the SDG target 15.7 (Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products), and target 15.c (Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities), both of which are measured by the same global indicators 15.7.1 and 15.c.1 (Proportion of traded wildlife that was poached or illicitly trafficked), is difficult to assess in the absence of data of value of legal and illegal trade.

No significant seizures, confiscations or forfeitures of specimens under CITES have been reported; neither have there been any criminal prosecutions of significant CITES-related violations in Romania.
Romania increasingly participates in joint international law enforcement operations related to wildlife trafficking promoted by INTERPOL and World Customs Organization, which led to more cooperation of CITES relevant national authorities in Romania in recent years. This is specially so regarding the tasks of detecting, analysing and monitoring illegal activities related to trade in fauna and flora.

**Convention on the Conservation of Migratory Species of Wild Animals**

In 1998, Romania became a Party to the Convention on the Conservation of Migratory Species of Wild Animals (CMS) and is also a Party to several agreements - African-Eurasian Migratory Waterbird Agreement (AEWA), Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS) and Agreement on the Conservation of Populations of European Bats (EUROBATS) – and Memoranda of Understanding (MoU) developed under the CMS umbrella such as the Memorandum of Understanding on the Conservation of Migratory Sharks, Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (Otis tarda) and the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors).

CMS implementation benefits from legal provisions adopted in Romania on nature conservation and biodiversity protection, in particular the Emergency Government Ordinance No. 57/2007 on the regime of natural protected areas, conservation of natural habitats and wild flora and fauna as amended by Law No. 49/2011. The NBSAP incorporates considerations on migratory species, although there are direct references to the goals and targets of the Strategic Plan for Migratory Species 2015–2023. Some Special Protection Areas include species listed in the Appendix I of CMS. The National Action Plans for the conservation of the Ferruginous duck (Aythya nyroca), Dalmatian pelican (Pelecanus crispus), Pygmy cormorant (Phalacrocorax pygmaeus) and Lesser Spotted Eagle (Clanga pomarina) were adopted through the MOs and are being implemented in relevant Special Protection Areas. All the existing Ramsar sites management plans include conservation measures for migratory species.

Awareness raising and educational activities, as well as presentations and training courses, were carried out for fishermen with respect to the impact of overexploitation of sturgeons.

The Apuseni National Park Administration together with the Bird and Nature Protection Association Milvus Group has undertaken cross-border conservation measures with Körös-Maros National Park Directorate (Hungary) through a Joint Intergovernmental Expert Group on Conservation of Biodiversity. The monitoring activities that followed are being financially supported by the Hungary-Romania Cross-Border Co-operation Programme 2007–2013.

Romania is committed to furthering the implementation of the Convention through the following measures:

- Updating and completing the Black Sea Cetacean Conservation Action Plan approved by the MO No. 374/2004;
- Approving the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (Otis tarda);
- Integrating the ecosystem approach into decision and policy making.

The main bottlenecks in the implementation of CMS are the insufficient consideration of migratory species in the relevant sectoral policies such as agriculture and forestry and the lack of effective measures to prevent cetacean losses in the Black Sea.

**Convention on Biological Diversity**


The third National Strategy and Action Plan for Biodiversity Conservation for the period 2014–2020 (NBSAP) (GD No. 1081/2013), elaborated with support from UNDP/GEF, sets the general strategic framework for biodiversity and nature protection in the country, identifying strategic objectives and corresponding actions to be implemented by 2020 and constitutes the strategic framework for implementation of the Strategic Plan 2013–2020 and the Aichi Biodiversity Targets of the Convention.
The responsibility for coordinating NBSAP implementation, at central and local levels, was entrusted to the ministry in charge of the environment, while many of the activities foreseen were committed to management of natural protected areas, managers of natural resources, and representatives of local communities, scientific and business communities and civil society representatives. Responsibility for monitoring the implementation of the Convention lied with the inter-ministerial committee responsible for coordinating the integration of environmental protection into sectoral policies and strategies at the national level, which for many years has not met for topics other than sustainable development.

A new revised NBSAP was elaborated in 2018 and posted in the Ministry website for public consultations. Since then and until December 2019 there has been no further development.

**Cartagena Protocol on Biosafety**

In 2003, Romania ratified the Cartagena Protocol on Biosafety. The Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol was ratified in 2018. The legal framework regulates decision-making processes regarding domestic use, including placing on the market and imports of genetically modified organisms (GMOs), transboundary movements of GMOs, handling and use of GMOs that are pharmaceuticals and establishes an institutional framework to pursue the enforcement of all those provisions. In addition, Romania furthered the implementation of Protocol provisions on advanced informed agreement procedure aiming at ensuring safety in the development, use and transfer of GMOs, through transposing the EU legislation on GMOs, which is consistent with the provisions of the Protocol.

NEPA is the competent authority regarding the GMOs deliberate release into environment and contained use of genetically modified microorganisms. The Commission for Biological Security is an interdisciplinary scientific body, without legal personality, with advisory role in this decision-making process by NEPA. This Commission is independent in carrying out its scientific activity and serves as national scientific advisory technical body.

Romania has in place a system of risk assessment. Notifications for experimental purposes or placing in the market must contain a risk assessment in order to identify and evaluate, on a case by case basis, the potential adverse effects of the GMO. This assessment is firstly carried out by the notifier and then evaluated by the Commission for Biological Security. For the first transboundary movement, the importer is obliged to obtain import consent from the competent authority. The subsequent imports, during the field trials period, have to be notified to NEPA, on a yearly basis. Currently, in Romania only MON 810 maize is authorized for cultivation in the EU.

**Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization**

Romania ratified the Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Nagoya Protocol) in 2019. NEPA is the competent authority for genetic resources. The implementation of the Nagoya Protocol started. Information on the measures undertaken to fulfil the Nagoya Protocol obligations, including measures related to monitoring genetic resources and compliance measures for users or the level of implementation of any of the operational objectives contained in the NBSAP is not available.

Assurance of correct and fair distribution of benefits resulted from the use of genetic resources is one of the main NBSAP goals, which includes other elements relevant to Access and Benefit Sharing, such as the protection of plant genetic resources for food and agriculture or protection of forest genetic diversity. In addition, NBSAP establishes the following operational objectives:

- Developing the legal and institutional framework appropriate to the consistent implementation of the Access and Benefit Sharing international regime;
- Adopting and implementing Bonn Guidelines;
- Developing the legal framework and the tax mechanisms required for the recognition of intellectual property rights concerning the access to genetic resources and the traditions of using genetic resources;
Establishing the indicators that provide the monitoring of implementation of Access and Benefit Sharing. Adequate institutional capacity and comprehensive legal measures for establishing a national system on Access and Benefit Sharing is still lacking.

**Convention concerning the Protection of the World Cultural and Natural Heritage**

The Convention concerning the Protection of the World Cultural and Natural Heritage was accepted by Romania in 1990. The Romanian National Commission for UNESCO operates under the ministry in charge of education. Under the Natural site category, Romania has two properties inscribed in the World Heritage List: Danube Delta (1991) and Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe (2017). In the same category, four properties were included by Romania in 1991 in the World Heritage Sites tentative list - Massif du Retezat, Pietrosul Rodnei, Codru secular Slatiora, Sinaia – with no subsequent progress on them.

In July 2017, the World Heritage Committee approved the transboundary extension of the World Heritage Site of the Primeval Beech Forests of the Carpathians and the Ancient Beech Forests of Europe (in 2007 it was inscribed with properties in Slovakia and Ukraine; in 2011 the Site was extended to Germany). This site now stretches over 12 countries, including Romania. From the 92,023.24 ha of the property, 23,982.77 ha (41 per cent) are located in Romania.

On 12 November 2018, the World Heritage Centre questioned Romania regarding third party information about logging operations in old-growth forests in the buffer zones of the Romanian components of the property. In 2019 Romania clarified that logging was undertaken in the buffer zones of the respective components and had no impact on their Outstanding Universal Value and that forest interventions were undertaken in accordance with the national legislation and the relevant management plans. Moreover, Romania provided information on the location, the amount of harvested wood and the size of forest area affected by the operations in question. Despite the information provided, the World Heritage Centre considered that a joint World Heritage Centre/IUCN Reactive Monitoring mission to the property in order to assess whether past, ongoing or planned legal and/or illegal logging operations in the buffer zones had or might have negative impacts on the property’s Outstanding Universal Value should take place. A 2018 memorandum regarding the necessary measures for a sound management and administration of ancient and primeval beech forests that were included in the UNESCO World Heritage List was signed. Since then, all 12 countries have to apply a unitary approach on buffer zone management.

Challenges that affected natural and cultural heritage include insufficient regulations and penalties for offenses concerning zoning, urban planning and protection of natural and cultural heritage. Two operational objectives were set in the NBSAP to overcome those challenges, however, information on their implementation is lacking.

Romania has three biosphere reserves established by the UNESCO’s International Coordinating Council of the Man and the Biosphere (MAB) Programme occupying an area of 132,647 ha on the national territory. These are Pietrosul Mare (1979), Retezat (1979) and Danube Delta in 1991, which became in 1998 a transboundary biosphere reserve following a joint effort by Romania and Ukraine.

There are dedicated annual budgets at national level both for the cultural heritage and for the natural heritage objects. The National Institute for Heritage and the Ministry of Culture and National Identity manage budgets for cultural heritage objects, and NANPA manages those for natural heritage objects. However, the Danube Delta Biosphere Reserve holds its own administration structure and dedicated state budget funding. Romsilva is also funding Rodna Mountains National Park and Retezat National Park management.

As at December 2019 there is no information on the country’s intention to propose new properties under the natural category to be inscribed in the World Heritage Sites list.

No data are available to assessment of achievement of the SDG target 11.4 (Strengthen efforts to protect and safeguard the world’s cultural and natural heritage), measured by the global indicator 11.4.1 (Total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage, by source of funding (public, private), type of heritage (cultural, natural) and level of government (national, regional, and local/municipal)). However, several measures taken by Romania are expected to contribute to achieve it. Efforts were made to elaborate a strategic framework for culture, with an action plan and an allocated budget. Two draft
strategic frameworks – firstly a sectoral strategy for culture and national heritage for the period 2014–2020 was prepared, followed by a national strategy for culture and national heritage 2016–2022, neither were, however, approved by GD. According to these strategies there were 30,108 historical monuments, out of which 75 per cent were endangered, and 35 per cent had a high degree of degradation. A new strategy to serve as a framework for the financial programming cycle 2021–2027 is expected to be developed with EU funding by end of 2020.

Despite the efforts done by Romania in seeking to safeguard its world’s cultural and natural heritage, challenges remain, in terms of the sites’ management and physical conditions.

In the definition of the domestic indicator and its corresponding target, in what concerns the world’s natural and cultural heritage, the Government considers only the current agreed global indicator and no other relevant indicators such as the number of natural heritage sites with a management plan effectively being implemented.

**Convention on the Conservation of European Wildlife and Natural Habitats**

Romania ratified the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) in 1993 and is committed to furthering the implementation of the Convention through the following measures:

- Elaborate, approve and implement the National Action Plans, for the conservation of protected species, in co-operation with universities, the national research institutes and NGOs.
- Consider the potential impact of other policies on the natural heritage.
- Elaborate, approve and implement a National Action Plan for the conservation of sturgeon which takes into consideration the provisions of the Pan-European Action Plan for sturgeons adopted by the Standing Committee of the Bern Convention.
- Implement a monitoring system for assessment of the sturgeons populations in the Danube River and Danube Delta.

**United Nations Convention to Combat Desertification**

Romania acceded to the Convention to Combat Desertification in 1998. The size of land area exposed to water erosion and landslides is of 7 million ha, mainly in the central zone of Transylvania, the area of the Bending Subcarpathians and the Plateau of Bârlad. The most affected areas subject to desertification are located in Dobrogea, Moldova, the south of the Romanian Plain and the Western Plain.

The 2000 National Action Plan to Combat Desertification with a timeframe up to 2025 includes measures aimed at preventing and combatting the effects of drought, degradation of land and desertification, namely:

- Diversifying the agricultural production and implementing drought resistant varieties;
- Settling 5,000 km of water courses, out of which 500 km in areas affected by desertification;
- Afforesting eroded soil on an area of 700,000 ha, out of which 115,000 in areas affected by desertification; creating of forest curtains and afforesting of an area of 15,000 ha;
- Planting grass on strongly polluted land of about 15,000 ha;
- Granting incentives of economic nature for preventing desertification;
- Promoting a set of rules in respect to the grazing land with a risk of desertification and erosion;
- Completing the legislation with special rules relating to the management of water in areas with risk of desertification;
- Enforcing with respect to the granting of facilities for the use of irrigation water;
- Promoting a special insurance system for areas with risk of desertification.

An assessment of the Plan implementation was not carried out. Reports submitted to the Convention’s Secretariat do not provide sufficient information on what has been accomplished. Based on some scattered information as at December 2019, the area of degraded land being afforested increased from 100 ha in 2000 to around 1,500 ha in 2019 through the implementation of a programme for afforestation of degraded land. Since 2007 changing forest land to other purposes is prohibited although several exceptions were foreseen, and since 2014 changing pastureland to other uses is forbidden.
Romania has implemented economic incentives with the support of European Structural and Investment Funds (ESI Funds), in particular the European Agricultural Fund for Rural Development. The Rural Development Programme 2014–2020 contains an agri-environment incentive package aimed specifically at addressing desertification issues. The package is open to farmers in selected areas with a high risk of desertification. The amount of the aid is €125 per hectare. To receive it, farmers must commit to planting drought-resistant crops, to practise crop rotation, and to keep tillage to a minimum. Only farmers with less than 10 hectares of arable land are eligible. This measure did not capture the interest of farmers. There was no demand and no payments were made.

As of December 2019, although being a country increasingly affected by desertification, Romania did not and does not plan to set land degradation neutrality targets.

**Framework Convention on the Protection and Sustainable Development of the Carpathians**

The ministry in charge of the environment is the main competent authority to coordinate the work under the Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention), which deals with biodiversity, forestry, tourism, transport and agriculture. At December 2019, Romania was in the process of ratifying the Article 12bis on Climate Change of the Convention. Since 2003, the five Protocols developed under the Convention have been ratified by Romania and an amendment on climate change was accepted by the country. The implementation activities of each protocol require developing various assessments and action plans and are not commensurate with the resources allocated as at October 2020.

Since July 2020, Romania is Party to the Sustainable Agriculture and Rural Development Protocol to the Convention. The National Mountain Area Agency within the ministry in charge of agriculture and rural development is responsible for the implementation of the Protocol. The strategic action plan to implement the Transport Protocol, which is under the responsibility of the ministry in charge of transport, is yet to be completed.

Romania participates in different projects under the Convention. Some of them, such as the Integrated Transport and Green Infrastructure Planning in the Danube-Carpathian Region for the Benefit of People and Nature and Restoring and managing ecological corridors in mountains as the green infrastructure in the Danube basin are financed through EU funds. The WWF Danube Carpathian Programme Romania is the lead partner of the latter.

Only one staff member is assigned to coordinate the work under the Convention and its Protocols, follow-up and keep up to date with all the activities under the Convention. Effectively coordinating Romania’s role and policies in the region is also challenging, even if ad-hoc meetings are held among national focal points under the Convention and its Protocols.

NGOs also implement projects or activities under the Convention. An example is the work on preparation of an “International action plan for the conservation and sustainable management for the Carpathian populations of large carnivores”, which is supported by the Convention’s Working Group on Biodiversity and WWF Romania. Even implemented by NGOs, projects implemented under the Convention need to have an assigned strategic action partner in the ministry in charge of the projects in order to promote the final results and be sure they are consistent with the national legislation and can be further used.

**Air protection, ozone layer protection and climate change**

**Convention for the Protection of the Ozone Layer**

Romania has been Party to the 1985 Vienna Convention for the Protection of the Ozone Layer and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer since 1993. It is Party to all amendments to the Montreal Protocol, except for the more recent 2016 Kigali Amendment. Since Romania joined EU, data on the quantities of ozone depleting substances (ODSs) imported and exported by the country have been reported by EU.

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Romania has fully complied with its core obligations under the Montreal Protocol, in particular the country has met its obligations on ODS Consumption phase-out in the period 2010–2017. Romania also complied with the annual limit of production of hydrochlorofluorocarbons. A licensing system is in place.

**United Nations Framework Convention on Climate Change**

Romania has been a party to the United Nations Framework Convention on Climate Change (UNFCCC) since 1994 and ratified the Kyoto Protocol in 2001 and the Paris Agreement in 2017. In 2019, Romania presented its Fourth Biennial Report under UNFCCC and the twenty-seventh version of the National Inventory Report covering the national inventories of greenhouse gas (GHG) emissions and removals for the period 1989–2017.

Romania committed to reduce the emissions by 8 per cent comparing to 1989 (base year) levels in the first commitment period 2008–2012. In the context of Decision No. 1/CMP. 8, for the second commitment period, 2013–2020, Romania committed to a GHG emissions reduction of 20 per cent compared to the reference year, 1990, as part of a joint fulfilment with the other EU Member States.

Romania achieved ahead of time the EU targets for 2020 in terms of the contribution of energy policies to reducing the impact of climate change. As part of its commitment to reduce emissions of greenhouse gases by 20 per cent relative to 1990 levels, in 2012 Romania had achieved a reduction of 47.96 per cent, compared with an EU average of 82.14 per cent. The general trend of GHG emissions in Romania shows a strong decrease compared to the base year (chapter 7).

Since 2012, there were many developments, including the adoption of the National Strategy on Climate Change in 2013, which was further updated and operationalized (becoming the National Strategy on Climate Change and Economic Growth Based on Low Emissions), and complemented in 2016 with a National Action Plan for its implementation. It also encompassed the preparation and approval of the National Energy Efficiency Action Plan approved in 2015, which played an important role in support of the attainment of the climate change goals. The National Commission on Climate Change is the body responsible for inter-ministerial coordination in the domain of climate change. It was reorganised in 2014 with the view to strengthening and improving its role and functioning. Since 2014, the activity of National Commission has, however, been very scarce.

Romania intends to revise the 2016 National Strategy and Action Plan and to use this exercise to thoroughly consider the technical and financial needs. Other priorities for the near future are the preparation of contingency plans to prevent and limit the foreseeable effects of climate change; the integration of measures to adapt to climate change in sectoral strategies and development plans; and the raising awareness of the imminent threat of climate change both at the political level of institutions of state and among citizens.

**Convention on Long-range Transboundary Air Pollution**


The ministry in charge of the environment is the competent authority for the Convention and NEPA has a supporting role. NEPA is the authority responsible for the activities for the implementation of the three Protocols. In particular, in reporting on emissions, the ministry coordinates the realization of the National Inventory regarding the emission of pollutants into the atmosphere in accordance with the provisions of the Convention.

In 2015, Romania amended the Governmental Emergency Ordinance No. 195/2005 including provisions to allow financial contributions to EMEP. Since then, Romania has been complying with EMEP requirements. Thus, the Recommendation 4.4 made in the second EPR of Romania asking the then Ministry of Environment and Forests to clearly identify budget sources which will be devoted to complying with the financial obligations under the
Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) to the Convention was implemented.

In line with reporting obligations, Romania uploads reports to the EEA/EIONET network and informs the Convention’s secretariat of the submission. Due to the limited number of personnel in NEPA and the various monitoring systems requiring specialised software to collect and report on data, it is challenging for the country to continuously ensure financial resources necessary to keep the hardware and software up to date and to train the personnel to use them.

The existing commitments for emission reduction by 2020 under the 2012 amended version of the Gothenburg Protocol, are ambitious and require considerable efforts for their implementation, including increasing costs in preventive measures and monitoring the measures; improving the residential heating sector, which, in turn, might put a financial burden on the population; and improving the transport sector and the management of transport in the main cities. Should subsidies be adopted to support these measures, costs on the Government would increase. Based on these considerations and projections on future national emission, Romania anticipates that reaching its commitments on emission reduction by 2020 might not be possible.

**Waste and chemicals management**

**Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal**


Regarding the control of transboundary movements of hazardous waste and other waste, Romania applies provisions of the Convention, including the Ban Amendment, as well as the Regulation (EC) 1013/2006 on shipments of waste. It is forbidden to import in Romania waste for disposal (by landfilling or by incineration), or to export from the country hazardous waste destined for the operations presented in Annex IV, section A of the Convention to the States that are not included in the Annex VII to the Convention (Ban Amendment).

In addition to waste listed in annexes I, II and VIII of the Convention, the domestic definition of hazardous waste also covers the European List of Waste. Hazardous waste is, for the most part, exported to other countries (since 2012 to Bulgaria, France, Germany, Hungary and Poland).

Showing since 2012 a pattern of increasing hazardous waste generation with some oscillations in 2014 and 2016, associated with a growing hazardous waste intensity, and an equally progressive increase in the amounts of hazardous waste exported, Romania faces challenges related to the management of hazardous waste, and in particular that the country does not have adequate and sufficient means for processing it. Romania has few and limited facilities dedicated for treatment and disposal of hazardous waste. Generally, hazardous waste generators dispose their waste at their own premises – either within factory sites or on company-owned land near to their factories. The exception to the above and the principal types of hazardous waste currently collected and transported now are healthcare wastes, used oils and batteries.

According to the Romanian legislation, all types of waste (hazardous or not) transiting through Romania are not subject to control and do not require an authorization from the ministry in charge of the environment.

The implementation of the 2017 National Waste Management Plan and Regional Waste Management Plans is expected to reduce the amount of hazardous waste and other waste generated and their respective exports (chapter 10).

**Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade**

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2016/770 establishing a common format for the submission of information concerning the operation of the procedures pursuant to Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals, EU has been in charge of preparation and submission of export notifications and import responses. Romania reports trade activities and submits data about exports and imports of Annex I chemicals.

Romania has submitted to the Convention eight decisions of no consent for importing chemicals and six decisions of consent for importing chemicals subject to specified conditions listed in Annex III of the Convention and subject to the Prior Informed Consent (PIC) Procedure.

In 2018 the chemicals legal framework was complemented with the MO No. 1214/2018 on the modalities of carrying out the control of the exports and imports of the chemicals that present risk, as well as the modalities of collaboration between the authorities, according to the GD No. 770/2016 regarding some measures for the application of Regulation (EU) No 649/2012.

Romania participated with other 12 EU Member States in a pilot project on the control of PIC (EU Regulation) duties conducted and developed in 2017 and 2018 by the European Chemicals Agency. NEG and the PIC Romanian enforcement authority conducted inspections between January and June 2018 using the manual and questionnaire prepared by the Forum pilot project on the control of PIC’ Working Group.

The more recent trajectory of implementing the obligations of the Convention and related EU legislation resulted in increased cooperation between Customs and NEG and in the harmonization of PIC enforcement practices, which was a challenge and resulted in a one-year postponement of the application of the Order No. 1214/2018 regarding the control procedures of the export and import of hazardous chemicals which became fully operational only in 2019.

Convention on Persistent Organic Pollutants

Romania ratified the Convention on Persistent Organic Pollutants (POP) in 2004. The National Implementation Plan (NIP) for the management of POPs 2008–2029 was firstly adopted in 2008 and further amended in 2013. Several measures contained in the Plan have been implemented, namely:

- Approving regulations regarding integrated pollution prevention and control (IPPC/IED);
- Applying a rationally environmentally friendly management of POP waste stocks, collection, storage and decontamination and / or disposal of equipment containing polychlorinated biphenyls (PCBs);
- Establishing a legislative framework for the management and control of PCBs, for the implementation of the National Strategy for Waste Management and of the National Waste Management Plan;
- Introducing fiscal incentives for the use of organic products, by promoting green public procurement and developing a program to increase the competitiveness of industrial products, in order to award the eco-label, for which financial support has been allocated from the state budget;
- Encouraging the use of cleaner vehicles by implementing measures to renew the national car fleet, as well as that of agricultural vehicles (chapters 3 and 8);
- Differentiating taxation of fuels and, starting from 2005, using unleaded petrol;

Romanian Authorities with regard to PCBs (identified as the second priority in the POPs National Action Plan) received support from the United Nations Industrial Development Organization for awareness-building campaigns at national level for POPs-related issues and the implementation of a project on PCB waste disposal.

There has been progress in reducing emissions of PCB’s in the last decade. Since 2011, the equipment containing PCB and also the used or waste PCBs has been reduced. An inventory for equipment containing PCB, and PCB waste, was prepared in 2005 and is annually updated. Based on this inventory, a specific national plan for elimination/disposal of equipment with PCB was adopted and is updated annually, based on the individual elimination plans established by the owners. A list of potentially contaminated sites was also prepared.

Among recent achievements are the following:

- Development of BATs and Best Environmental Practices (BEP) guidelines, in order to prevent and reduce emissions from waste incinerators; and large combustion plants;
Gradual modernization of large combustion plants applying BAT and BEP, by implementing modern air pollution control systems and setting standard emission limit values for incineration and co-incineration of waste

Improvement of the environmental performance in the energy sector by implementing and certifying the environmental management system, by allocating financial support from the state budget;

Increase of energy efficiency, an essential component of the national energy policy through the approval of the National Strategy on Efficiency and the implementation of adequate programmes for increasing the energy efficiency.

Difficulties encountered by Romania in the implementation of the Convention obligations are related to three factors: financial constraints, unsatisfactory provision of technical capacity, as well as lack of commitment by stakeholders to the process.

Minamata Convention on Mercury

Romania ratified the Minamata Convention on Mercury in 2017. The country served as Vice-Chair to the Bureau of the Implementation and Compliance Committee from 2017 to 2019 and as Chair since 2019.

Mercury has been among the hazardous waste exported by Romania to Germany. There are no vinyl chloride monomer installations currently in operation in Romania, although there are some quantities of mercury still present from a facility that is no longer in operation.

No inventory of historic industrial hotspots contaminated by mercury has been carried out. As at December 2019, Romania was finalizing the first report to the Convention.

Strategic Approach to International Chemicals Management

Romania is committed to the SAICM and is actively pursuing it through the implementation of EU policy and regulatory system for dealing with chemical substances, in particular the provisions relating to knowledge and information on chemicals and chemicals management.

Convention on the Transboundary Effects of Industrial Accidents

Romania has been Party to the Convention on the Transboundary Effects of Industrial Accidents since 2003. In 2016 the country ratified the Directive 2012/18/EU on the Control of Major-Accident Hazards Involving Dangerous Substances (Seveso III), the provisions of which are more stringent than the ones under the Convention (Law No. 59/2016 on control of major-accident hazards involving dangerous substances). The law of ratification No. 92/2003 of the Convention was amended following the amendment of Annex I to the Convention, which specifies the hazard substances falling under the Convention, aligning it with the Globally Harmonized System of Classification and Labelling of Chemicals.

The competent authorities are the ministry in charge of the environment, NEPA, NEG and the ministry in charge of internal affairs through the General Inspectorate for Emergency Situations and its local branches. They cooperate and are responsible for industrial safety, such as civil and environmental protection, risk assessment, land-use planning and disaster risk reduction at national and local level.

Romania participated in the project on hazard and crisis management in the Danube Delta (2010–2015) that aimed at improving cooperation with the Republic of Moldova and Ukraine in the Danube Delta region (box 6.1).

**Box 6.1: Cooperation on prevention of industrial accidents in the Danube Delta**

The Project on hazard and crisis management in the Danube Delta* was developed under the Convention on the Transboundary Effects of Industrial Accidents, involving the Republic of Moldova, Romania and Ukraine. The project was carried out between 2010 and 2015 within the Assistance Programme of the Convention. Its main objective was to enhance and, if possible, to harmonize the countries’ mechanisms for hazard and crisis management through improved cooperation. The countries received expertise from Czechia, Germany and the Netherlands. Along the implementation of the Project,
Romania started as beneficiary country and then also provided technical assistance to the two countries. The outputs of the Project were:

- A hazard map for the Danube Delta
- A comparative analysis for the Republic of Moldova, Romania and Ukraine
- Safety guidelines and good industry practices for oil terminals
- Draft Joint Contingency Plan for the Danube Delta region for the Republic of Moldova, Romania and Ukraine

The project included inspections in a simulated risk environment to oil terminals of the three countries. Representatives of Romania involved in the Project reported that the visits to the ports of Galați (Romania), Giurgiulești (Republic of Moldova) and Odessa (Ukraine) allowed experts to use specific checklists for inspecting plants handling hazardous substances and improve them. Furthermore, the site visits provided the possibility for technical experts from the three countries to work together on an inspection in a simulated risk environment. Working together allowed experts from the three countries to highlight differences in good practices, to share information and experience, and to create working relations between different authorities and operators. In addition, the project was useful for raising public awareness of prevention, preparedness and response measures for hazardous activities with local population.

The Safety Guidelines and Good Practices for Oil Terminals developed within the Project, were recommended for use by all ECE member States by the Convention’s Conference of the Parties in 2014. Another aspect of the Project was the signature of a trilateral declaration of intention. Romania and the Republic of Moldova have completed internal procedures towards the signature.

* = www.unece.org/env/teia/ap/ddp.html

European agreements concerning the international carriage of dangerous goods

Romania is Party to the European Agreement concerning the International Carriage of Dangerous Goods by Road, including the 2019 amendment (Order of the Ministry of Transport No. 1010/2019), and to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. For both instruments, the competent authority is the ministry in charge of transport. The country implements the agreements and its representatives regularly attend meetings. In 2017, Romania established the Operational Centre for emergency situations with permanent activity within the then Ministry of Transport (Order of the Minister of Transport No. 1352/2017). The environmental authorities are not involved in the activities related to these agreements.

Public Participation

Romania has been Party to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters since 2000 and to its Protocol on Pollutant Release and Transfer Registers since 2009. The ministry in charge of the environment is the authority responsible for the implementation of both the Convention and the Protocol.

Since 2005, Romania has been having cases concerning its compliance with the Convention. As at December 2019, Romania was subject to a specific decision on compliance, Decision VI/8, taken in September 2017. The decision traces back to the findings and recommendations of the Compliance Committee on communications ACCC/C/2010/51 and ACCC/C/2012/69. The issues of noncompliance concern the failure to respond to requests for environmental information in accordance with the Convention; the failure to provide for public participation with respect to a procedure for issuing an archaeological discharge certificate; the failure to provide the public with sufficient time frames to get acquainted with strategic documents subject to the Convention and submit their comments thereon; and a lack of timely court procedures that provide adequate and effective remedies with respect to access to environmental information. The issues identified in Decision VI/8 also showed that the environmental authorities need the support of other national ministries and authorities to implement international agreements, when the non-compliance happens in other authorities than the environmental one, as in the case of responding to requests for environmental information, mentioned above, as in the case, another ministry was approached by the public.

Romania has been working to implement the Decision VI/8 and has submitted the required progress reports due in October 2018, October 2019 and 1 October 2020. In keeping with its stated aim to implement the Decision,
the ministry in charge of the environment made available on its website the strategy for the implementation of Decision VI/8.

Environmental assessment

The country is Party to the Convention on Environmental Impact Assessment in a Transboundary Context since 2001 and to the Protocol on Strategic Environmental Assessment since 2009. The first and the second amendments to the Convention were accepted by the country in 2006 and 2016, respectively. Romania approved guidelines on environmental impact assessment (EIA) (Order of the Minister of Environment, Water and Forests No. 1825/2016). The competent authority for both treaties is the ministry in charge of the environment. The ministry is responsible to make available to the public information regarding the environmental assessment for plans, programmes or projects in accordance with the GD No. 43/2020.

The 2016 General Transport Master Plan foresees strategic environmental assessment as part of the process to approve projects to develop transport infrastructure for road, rail, water, air and multimodal sectors. At the same time, no member of the staff of the ministry in charge of transport received training on running a strategic environment assessment. The ministry in charge of the environment was not involved on the Master Plan’s strategic environment assessment.

Water

Convention on the Law of the Non-Navigational Uses of International Watercourses

Romania is not a party to the Convention on the Law of the Non-Navigational Uses of International Watercourses and there is no indication of it having any intention to accede to that instrument.

Convention on the Protection and Use of Transboundary Watercourses and International Lakes

Romania has been Party to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes since 1995. The country became Party to the Protocol on Water and Health under the Convention in 2000. The authority responsible for the Convention is the ministry in charge of water management.

Romania, as member of the Danube River Basin, has been participating in activities carried out by the Convention on water adaptation to climate change. The ministry in charge of water reported to the secretariat to the Convention and to UNESCO on developments in achieving SDG target 6.5 (By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate), which is measured by the global indicator 6.5.2 (Proportion of transboundary basin area with an operational arrangement for water cooperation). According to the joint ECE-UNESCO report on the Progress of Transboundary Water cooperation published in 2018, the value of the indicator 6.5.2 for Romania was 100 per cent (chapter 9).

Protocol on Water and Health

The ministry in charge of water leads the implementation of the Protocol on Water and Health, in cooperation with the Ministry of Health, though, the health focal point is provided by the National Institute of Public Health, subordinated to the Ministry of Health. Representatives of the Ministry of Water and Forests attended meetings under the Convention. When expert level is needed e.g., for workshops, other authorities are represented, such as Romanian Waters.

Since 2010, Romania has been complying with the Protocol’s reporting requirements for the last four cycles. The country established an intersectoral working group to elaborate target setting. The workshop on collecting good practices on target setting, organized by the Protocol’s secretariat in Geneva in March 2016, helped Romanian experts to develop a baseline analysis for identification and prioritization of targets, setting short, medium and

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long – term target dates and submitting them to the secretariat. Romania revised the national targets in 2019 and submitted them to the secretariat.

The Protocol on Water and Health was recognized in the SDS 2030 as a means to implement the SDG 6 on ensuring availability and sustainable management of water and sanitation for all in the country.

**Danube River Protection Convention**

Romania has been Party to the Danube River Protection Convention (Danube Convention) since 1995. The ministry in charge of water and Romanian Waters are the two competent authorities for the Convention.

**Black Sea Convention**

Romania has been Party to the Black Sea Convention since 1992 and attends meetings of the Black Sea Commission and of technical advisory groups. The ministry in charge of water, Romanian Waters and the National Institute for Marine Research are national competent authorities.

Romania provided input to the Black Sea State of Environment Report 2009–2014/5 issued in 2019. This Report aims at identifying gaps in knowledge and to serve as basis for judging the effectiveness and adequacy of environmental protection measures proposed in the 2009 Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea and for making any necessary adjustments in national environmental policies and elaboration of scenarios for tackling environmental consequences of the human activities in the Black Sea basin.

Romania participates in projects financed by the EC related to marine and coastal environmental monitoring.

**Protection of the marine environment**


Romania has since 1993 been a party to the 1937 International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997 (MARPOL) with all annexes. Romania is not Party to the Convention for the Control and Management of Ships Ballast Water and Sediments, nor to the 2009 Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.

**Other water related agreements**

Romania shares the Danube River basin with 19 other countries, and it has the largest share (about 29 per cent) of the Danube River Basin within boundaries. The country is also part of bilateral commissions established for the protection and management of resources from the Danube River Basin. The International Commission on the Protection of the Danube River (ICPDR) is also involved in the planning in sub-basins, such as the one of the Tisza River. Under ICPDR, a Tisza group was established to ensure the harmonization and effectiveness of many bilateral agreements that Romania has with its neighbouring countries.

In 2016, following the adoption of the updated Danube River Basin District Management Plan by ICPDR, the country adopted the National Management Plan for the period 2016–2021 (GD No. 859/2016). The ministry in charge of water and Romanian Waters posted on their websites the drafts of the National and River Basin...
Management Plans for public consultation and the final documents. EU funds are to cover more than 40 per cent of the costs of implementing the plan.

Romania is working on flood management (chapter 6) and participates in projects on flood management coordinated by ICPDR.

In 2016, Romania adopted the ICPDR Danube Declaration that included the support of Parties to Romania and Bulgaria to promote coordination in the Black Sea Region to implement the Marine Strategy Framework Directive and the Water Framework Directive.

Transboundary management of sub basins such as the Somes/Szamos and Mures/Maros including joint monitoring, data collection and data management are carried out through the Romanian-Hungarian Hydrotechnical Commission. In addition, agreements between Republic of Moldova and Romania for the Prut Sub basin have led to a Joint subcommission for Operation of the Hydrotechnic Knot “Stanca-Costesti”.

6.3 Bilateral cooperation on the environment and sustainable development

The main priorities for bilateral cooperation on the environment are very much the same as for regional cooperation: strengthening cooperation in the Black Sea Region, building cohesion (in all its dimensions) in the Danube Region and managing transboundary watercourses.

Although limited information on the activities undertaken for implementing many bilateral agreements, and especially on the results of expected outcomes, prevents a sound analysis of their effectiveness, a tendency to decrease the number of bilateral agreements and institutional mechanisms for their operationalization is observed in the last decade.

Following the accession of Romania to EU, the bilateral cooperation was reconfigured and relocated to the European territorial cooperation framework. During the EU 2014–2020 financial programming period, Romania participates in several European territorial cooperation programmes with each of its neighbouring countries and in the transnational programmes on the Danube and Central Europe. Increasingly, since 2007, the cross-border and transnational programmes became the main platform for cooperative efforts between Romania and its neighbouring countries.

The Convention between Romania and Bulgaria on the cooperation concerning the protection of the environment, which entered into force in 1992 continues to serve as the bilateral cooperation framework between the two countries.

The Agreement between Romania and Hungary on the cooperation regarding the protection of the environment dates to 2000. The Joint Commission established to steer the Agreement met only once since 2012. Within the framework of this Agreement, expert groups were created on Nature Conservation, International Projects and Programs, Environmental Protection and on Environmental hotspots (Rosia Montana, Certej). Since 2012, the cooperation among experts has led to the following concrete results: cross-border cooperation system shared by the Directorate of Criş-Mureş National Park and the Administration of Apuseni Natural Park focussing on the management of Cefa Natural Park; implementation of the project “Development of the cross-border protected area in the territory of Criş-Mureş National Park and Cefa Natural Park”; and cooperation efforts undertaken to jointly implement and monitor LIFE projects on the conservation of the red-footed falcon (*Falco vespertinus*) in the Pannonian Region or on the conservation of saker falcon (*Falco cherrug*).

Cross border co-operation between the Republic of Moldova, Romania and Ukraine on nature preservation is supported by the 2000 Declaration for the creation of the Lower Danube Green Corridor, based on which the three countries agreed to set up a functional network of wet areas along the Lower Danube. The follow-up of the tripartite Agreement was the subject of the three meetings of the Joint Commission established within its umbrella between 2011 and 2015. A network was then established.

An agreement on cooperation on environmental protection between Romania and Germany has been in place since 2000. Technical assistance on several environmental issues has been provided within the Advisory Assistance Programme of the German Federal Ministry of the Environment. Between 2011 and 2015, 17 projects
with Romanian participation were implemented. Since 2015 three projects were carried out, the first on the implementation of energy saving measures in schools in 2016, the second, which ended in 2019 consisted in technical support on remediation of petrochemical sites in Romania and the third project still on-going focuses on conservation of the endangered butterfly the Danube clouded yellow (*Colias myrmidone*) in Natura 2000 sites in Romania. The Joint Commission serving as the steering body under the Agreement meets every five years.

In 2010, an agreement between Romania and the Republic of Moldova on the cooperation and sustainable use of the waters of the Danube and Prut rivers entered into force. In 2012 the two ministries in charge of the environment signed a joint statement regarding the allocation of €15 million of the total budget to projects on climate change. A third Additional Protocol to the Agreement was signed in 2013 establishing modalities for the use of the Technical and Financial Assistance Programme which are the core activities established under the Agreement, including the €100 million grant allocated by Romania to the Republic of Moldova.

In 2013 a Memorandum of Understanding was signed between Romania and Montenegro on the cooperation regarding the protection of the environment and sustainable development, which is a successor agreement to the one initially signed in 1992 and amended in 2003. Within this framework the governments committed to cooperate in the following areas: harmonization of environmental protection policies with the specific EU requirements; climate change; reduction, control and monitoring of air pollution; waste and chemicals management; water management; biological diversity conservation, natural protected areas management; sustainable development policies and indicators; EIA and public participation; use of economic instruments for the implementation of environmental strategy objectives at national and local level; setting up the legal and institutional framework for implementation of the environmental legislation. As at December 2019, in line with the signed Memorandum and cooperation with Romania, the preparation of project proposals aiming to support Montenegro in regard to fulfilling closing benchmarks within the Chapter 27 is ongoing.

Several agreements have been signed between Romania and Turkey; the first one, which was a framework agreement for cooperation on environmental protection, was signed in 2001 but its timeframe was not prorogued and therefore it ceased to be in force in 2013. In 2015, three new agreements were signed, namely on meteorology and hydrology, which entered into force in 2018, on water management, which has not entered into force due to the lack of compliance of both Parties with the legal procedures required and lastly on forestry which entered into force in 2019.

In 2016, Romania and the United States of America signed a memorandum of initiation of negotiations on cooperation on management of protected natural areas between the Romanian ministry in charge of the environment and the National Park Service within the Department of the Interior of the United States but no developments occurred since then.

In 2019, an agreement on cooperation on environmental protection, sustainable development and green economy was approved between Romania and Ecuador. A Joint Commission was established to oversee and coordinate the implementation of the Agreement.

### 6.4 Participation in non-binding processes related to the environment and sustainable development

**Environment for Europe process**

**Batum Initiative on Green Economy**

Romania made two voluntary commitments to the Batumi Initiative on Green Economy (BIG-E): (1) to establish and/or strengthen inter-ministerial and multi-stakeholders working groups/task forces on green economy; and (2) to establish national sustainable consumption and production strategies and plans or include them in green economy policies.

At the end of 2018 Romania reported that the implementation of both commitments was in progress. The implementation of the first BIG-E commitment was at the stage of developing a matrix to include policies and strategies of all relevant authorities by the Inter-ministerial Committee for the Coordination of Environmental Protection Integration into National Sectoral Policies and Strategies. As at December 2019, the activity was on
standby, which could be due to the uncertainty of the role on greening the economy of the Committee and of the ministry in charge of the environment after the creation of the Department for Sustainable Development.

The delivery on the second BIG-E commitment foresaw the inclusion of Sustainable Consumption and Production strategy into the revised National Strategy for Sustainable Development, and the implementation of the strategy was to be monitored by the Department for Sustainable Development. The Law No. 69/2016 on green public procurement assigns the ministry in charge of environment as the main authority responsible for the elaboration of the national policy on green public procurement and requires the preparation of guidelines containing the minimum criteria for environmental protection for product and services. As at December 2019, the national guidelines are lacking (chapters 1 and 3).

As at December 2019 steps in implementing the two BIG-E commitments were put on hold, waiting for the final institutional framework following the establishment of the Department for Sustainable Development. This situation was also captured by a 2015 study of the World Bank, which noted, among others, the inter-ministerial cooperation (e.g. cooperation of inter-ministerial committees) was weak, especially mentioning that meetings of the inter-ministerial committees on climate change and sustainable development were not held regularly and had weak follow-up mechanisms.

**Batumi Action for Cleaner Air**

Romania committed to three actions under the Batumi Action for Cleaner Air (BACA): (1) establishing national programme to control air pollution; (2) improving inventories and information on levels of emissions; and (3) developing and upgrading the National Air Quality Monitoring Network.

The ministry in charge of environment is responsible to monitor the implementation of BACA commitments. The implementation of the first commitment is on-going. Following the adoption of the Law No. 293/2018 on reduction of national emissions of certain atmospheric pollutants, Romania identified the national authorities responsible for development and implementation of the national programme to control air pollution.

The then Ministry of Environment applied for a EC project “Developing the capacity of the Ministry of Environment regarding the elaboration of the national policies and measures necessary to comply with the national commitments to reduce the emissions of certain atmospheric pollutants up to the year 2030”. The project was filed to receive support in implementing the first BACA commitment. As at December 2019, there was no reply on the success of the application.

For the second commitment, the country prepared the emission inventory for the period 2005–2015 and completed emission time series for the period 2000–2004 based on the EMEP/EEA air pollutant emission inventory guidebook. For the third commitment, the country extended the number of sampling points for continuous measurement, which were integrated in the National air quality monitoring network.

**10-Year Framework of Programmes on Sustainable Consumption and Production Patterns**

Romania is progressing at the policy level in achieving the SDG target 12.1 (Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries), measured by the global indicator 12.1.1 (Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production).

Romania does not have a specific action plan on sustainable production and consumption (SCP) patterns. However, Romania has a set of ambitious objectives set for 2020 and 2030 in the SDS 2030 that, if achieved, would allow them to make a giant leap in terms of performance in SCP. For 2020, the national objective is to decouple economic growth from environmental degradation by reversing the ratio between resource consumption and creation of value added; to move closer to the average performance levels of the EU in terms of sustainable consumption and production. And for 2030, To come close to the average level attained at that time by the other EU Member States in terms of sustainable production and consumption.

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The main objectives of Romania’s NSDS National Sustainable Development Strategy for the 2020 Horizon are: firstly to decouple economic growth from environmental degradation by reversing the ratio between resource consumption and creation of value added; and secondly to bring national performance closer to the EU in terms of sustainable production and consumption. According to statistics from the United Nations Statistics Division, the domestic per capita material consumption is still increasing but at a diminished rate since 2015. The decoupling from the GDP took place already in 2011. The Domestic material consumption per capita, by type of raw material in tons increase by 15.53 per cent between 2010 and 2017 while the Domestic material consumption per unit of GDP, by type of raw material (kg per constant 2010 US$) decrease by 13.39 per cent during the same time period (table 3.13 and figure 6.1). Romania’s GDP increased by 29.96 per cent from 2010 to 2017 and while the absolute level of material consumption is still rising country’s economy is able to create more value out of the used raw materials.

The path to reach 2030 fulfilling all the objectives and targets will, however, be very demanding because Romania is a long way from the scenario envisaged for 2030.

There is low take-up of measures like EU Ecolabel and EU Eco-Management and Audit Scheme (EMAS). Ecolabel was obtained for the following categories of products and services: interior paint, exterior paint, enamel, primer, lubricants, mattresses, printed paper, tissue paper, textiles, lubricants, detergents, soaps, shower gel, computers, laptops, and tourist accommodation services. Between 2008 and 2017, 41 licences were assigned. In total, 246 products and services were awarded an EU Ecolabel. Being voluntary and implying considerable costs were the main reasons pointed out for the low level of Ecolabel certified companies. In terms of the voluntary participation of organizations in the EU Eco-Management and Audit Scheme (EMAS), Romania registered 11 EMAS organizations in 2018 (figure 2.11). As of October 2019, 6 EMAS organizations were registered.

Resource productivity in Romania continues to be low and has even fallen compared to the EU average. The Law on green public procurement No. 69/2016 cannot be implemented due to the lack of national guidelines on GPP (chapters 1 and 3). The packaging waste tax is an instrument that fits the Extended Producer Responsibility scheme (chapter 10).

Taking into account the set of measures already adopted, the experience that resulted from implementing them and the framework of objectives and goals defined for the next ten years, Romania could reach 2030 with a different SCP pattern than it currently has, provided that Romanian authorities focus on implementation, including overcoming the weaknesses of the measures already implemented.

Other regional processes
Romania implements the INSPIRE Directive. GD No. 579/2015 appointed the authorities responsible for implementing INSPIRE Directive. The National Focal Point for INSPIRE Directive is the Romanian National Cadastral Agency. Romania is establishing SEIS. NEPA has the responsibility to manage the environmental information system through the electronic atlas. The model of governance used to implement the INSPIRE Directive is expected to be used for SEIS. GD No. 43/2020 refers to ensuring a network of spatial data in the fields of competence of the authority in charge of the environment.

According to the World Bank study on Romania: Toward a Low Carbon and Climate Resilient Economy: Transport Sector Analysis, Romania transport emissions could rise by 34 per cent in 2015–2050. The study highlighted that from 1990 to 2012, the transport sector’s share in total emissions increased by 78 per cent in Romania and only by 10 per cent in EU and transport emissions are falling in EU and this trend is expected to continue, while Romania’s emissions are set to grow with rising incomes and EU convergence. One of the conclusions of the study is that institutional arrangements and coordination among the different authorities is critical. Such coordination is critical, to be able to implement the 2016 Romania General Transport Master Plan and other policies, adopted towards reducing greenhouse-gas emissions. The study also provided Romania with selected green interventions to decrease GHG emissions due to transport. Romania does not participate in activities under the Transport, Health and Environment Pan-European Programme (THE PEP) and therefore does not benefitting from THE PEP experience.

6.5 International technical assistance on the environment

European Funds

The development of environmental policy and its implementation and enforcement in Romania has, in a very prominent way, been supported by EU. The main source of financial support to Romania for environment protection is the European Funds, with emphasis on ESI Funds. Most of the technical assistance that public authorities benefit from is directly associated with ESI Funds. There was a drastic paradigm shift regarding the nature of the technical assistance and the country’s role in it when Romania became an EU Member State. Public authorities acquire consultancy services, the charges of which are co-financed by ESI Funds.

Through eight national and regional programmes, Romania has been allocated €30.84 billion from ESI Funds over the period 2014–2020, of which around 30 per cent is devoted to supporting the shift towards a low-carbon economy in all sectors; promoting climate change adaptation, risk prevention and management; and preserving and protecting the environment and promoting resource efficiency. As at 31 December 2019, the rate of payments (transfers) from the EC to Romania was situated at 36 per cent, which is worrying as there are four years left to close the current programming cycle and the money that is not executed will be returned to the EC.

Two National Operational Programmes, the Administrative Capacity Operational Programme and the Large Infrastructure Operational Programme assume the lion’s share in supporting environmental projects.

Administrative Capacity Operational Programme

Under the Administrative Capacity Operational Programme 2014–2020, five capacity development projects were approved with a total cost of almost 54.3 million lei:

- Drafting guidelines necessary to improve the administrative capacity of the environmental protection authorities in order to carry out the EIA procedure;
- Developing administrative capacity of the ministry in charge of the environment to implement policy on waste and contaminated sites management;
- Developing the administrative capacity of the ministry in charge of the environment to implement the biodiversity policy;
- Developing and implementing common systems and standards for optimizing environmental decision-making processes;

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Chapter 6: Implementation of international agreements and commitments

- Applying evidence-based policy system in the ministry in charge of the environment for the systematization and simplification of waste legislation and implementing simplified procedures for reducing the administrative burden for the business environment on climate change.

For the first three projects, results obtained so far are: (i) an increased analytical and decision-making capacity of environmental authorities that carry out EIA procedures and development of general methodological guides applicable to all types of projects under Annexes I and II of the EIA Directive 2014/52/EU and of specific guides (for certain types of projects in areas of economic interest) in order to implement the EIA procedure at national level in a coherent and uniform manner; (ii) preparation of the National Plan for Waste Management, which includes the National Plan for the Prevention of Waste Production; (iii) development of a study to define, classify, prepare the inventory and prioritizing investments on restoration of degraded ecosystems; (iv) elaboration of a GIS database of degraded ecosystems, its monitoring procedure, updating and update; (v) revision of the National Strategy and of the Action Plan for Biodiversity Conservation 2014–2020, and elaboration of a monitoring system; (vi) preparation of a methodology for evaluating protected natural areas management plans and of a guide for the elaboration of management plans; and (vii) evaluation and approval of protected natural areas management plans.

In the framework of the last two projects, it is expected that a waste code and a simplified procedure for reducing the administrative burden for economic agents on climate change will be drafted and that the ministry in charge of the environment becomes better capacitated to implement measures and actions that reduce the administrative burden for the business environment on climate change and waste.

**Large Infrastructure Operational Programme**

Three projects devoted to biodiversity and nature conservation were approved within the Large Infrastructure Operational Programme 2014–2020 with a total amount of almost 137.8 million lei:

- Increasing the level of knowledge of biodiversity by implementing the system of monitoring the state of conservation of bird species of community interest and reporting on the basis of Article 12 of the Birds Directive;
- Adequate management of invasive species in Romania, in accordance with EU Regulation No. 1143/2014 regarding the prevention and management of the introduction and spread of invasive alien species;
- Increasing the level of knowledge of biodiversity by implementing the system of monitoring the state of conservation of the species of birds of community interest in Romania and reporting under Article 17 of the Habitats Directive.

There are some delays in implementation. Therefore, the three projects are expected to attain the following results: (i) updating, completing and improving the methodology for monitoring and evaluating the conservation status of the bird species of community interest; (ii) estimating population numbers, distribution and short and long term trends of bird species of community interest; (iii) drafting the country report based on the Birds Directive; (iv) developing guides with monitoring protocols and unitary methodologies for monitoring the conservation status of species and habitats of community interest; (v) reconfiguration and updating of the national system of monitoring of species and habitats of community interest, compatible and technically correlated according to the new reporting format; (vi) inventory and mapping of the invasive allogeneic species and elaboration the related national list; (vii) identification of the priority routes of introduction and prioritization of invasive allogeneic species; and (viii) participatory development of the action plan for addressing the priority introduction routes of invasive allogeneic species from Romania.

**Other**

Support from ESI Funds is not limited to national operational programmes. In the cycle 2014–2020 Romania is also involved in the following cooperation programmes:

- Seven programmes belonging to the cohesion policy: two cross-border cooperation programmes, between Romania and Bulgaria and between Romania and Hungary, a transnational cooperation programme (Danube), and four interregional cooperation programmes (INTERREG EUROPA, URBACT III, INTERACT III, ESPON 2020);
• One IPA cross-border cooperation programme between Romania and Serbia;
• Four cross-border cooperation programmes belonging to the neighbourhood policy, namely Romania and the Republic of Moldova, Romania and Ukraine, at the border between Hungary-Slovakia-Romania-Ukraine, and the Black Sea Basin programme.

Other projects are co-financed by the cooperation programmes focussed on environmental protection and in some cases the Romanian environmental public authorities are their beneficiaries. This was already the case in the 2007–2013 cycle. Within INTERREG EUROPE118 two projects with a total cost of €2.8 million are on-going with the Romanian ministry in charge of the environment as beneficiary (Partner):

• “GPP STREAM – Green public procurement and sustainability tools in favour of resource efficiency”, aimed at developing specific measures and tools to better address existing and potential beneficiaries of environmental products and services (June 2018–May 2020);
• “Smart Edge – Sustainable Metropolitan Areas and the Role of the Edge City”, aimed at assessing the role of cities in metropolitan areas or regions, in reducing carbon emissions, within a platform for knowledge and exchange of best practices and experience (June 2018–November 2022).

Beside the ESI Funds, since 2009 Romania has also benefited from the support of European Economic Area Grants, in the amount of €693 million in the field of environment.

Development cooperation

Romania became an official development assistance (ODA) donor country upon joining EU in 2007. In 2016, Romania’s net ODA amounted to US$269 million, representing an increase of 71 per cent in real terms over 2015. ODA/Gross National Income (GNI) ratio rose from 0.09 per cent in 2015 to 0.15 per cent in 2016. The Law No. 213/2016 provides the legal basis for the development co-operation and humanitarian aid activities financed from Romanian public funds. Priorities on development cooperation are defined with a 4-year timeframe in the strategic multiannual development cooperation programme, while the Annual development cooperation plans specifies the activities to be undertaken on a yearly basis.

The Ministry of Foreign Affairs is the national coordinator of Romania’s development cooperation and humanitarian aid policy. An Advisory Committee, composed of representatives from line ministries, public institutions, civil society, academia and the private sector, is responsible for ensuring the co-ordination and unity of strategic planning and priorities on development cooperation. The Law No. 213/2016 also established the Agency for International Development Cooperation, which is responsible for implementing development co-operation and humanitarian aid-related activities.

As of 2013, Romania became the principal donor of aid to the Republic of Moldova. As from 2018, projects were supported in the areas of sustainable energy and climate.

Since 2018, Romania became a participant in the OECD Development Assistance Committee.

6.6 Policy and institutional framework

Policy framework

The SDS 2030 is the most comprehensive strategic document and presents an integrated vision, including environment, which can guide and serve as a beacon for the development of environmental policy (which can be more than a mirror of EU policy and legislation), both nationally and, to a lesser extent, externally.

Institutional framework

From 2012 until early 2020 the two main national authorities dealing with environmental issues – a ministry in charge of the environment and a ministry in charge of water and forests – have existed during different periods as either one or two governmental authorities (chapter 1). According to GD No. 43/2020, the Ministry of
Environment, Waters and Forests ensures the implementation of international treaties, conventions, agreements, memoranda and protocols on environment to which Romania is a Party. The Ministry of Foreign affairs has a unit dealing with MEAs.

The structure of the two ministries before 2020 was governed by GD No. 19/2017 for the Ministry of Environment, also establishing the competences to follow given international agreements or processes, and by Government Ordinance No. 495/2018 for the Ministry of Water and Forests. Both Ministries had an international relations department, generally not involved in substantive work. Staff in other departments, when identified as focal points or responsible for a specific agreement or process, were dealing directly with the relevant secretariats. Often, the units responsible for substantial work were understaffed and had to work on an issue both in the national and international interface. This aspect was also recorded in a 2015 study of the World Bank\textsuperscript{119}, which said: “(…) one of Romania’s biggest challenges relates to human resources capacity and the enabling environment (…) for implementation.”

In light of the current institutional structure, the responsibilities regarding international environmental cooperation are mostly concentrated in a trilogy composed by the Ministry of Environment, NEPA and NEG. Nearly all focal points for global and regional environmental agreements are staff responsible for relevant clusters, e.g., nature conservation and biodiversity, climate change, air pollution, and chemicals, within one of these entities.

Romania introduced a mechanism to coordinate environmental protection, at national level, through different ministries and policies: the Inter-ministerial Committee for the Coordination of the Integration of Environmental Protection into Sectoral Policies and Strategies at the National Level, which was only active until 2007. With the GD No. 741/2011, the country reorganized the Inter-ministerial Committee with the task of coordinating environmental protection.

With the creation of the Department for Sustainable Development within the General Secretariat of the Government (GD No. 313/2017), some of the competences and functioning of the Inter-ministerial Committee, such as sustainable development, were shifted to the new structure. This created a situation that required a review of the competence of the Inter-ministerial Committee and the individual ministries. In fact, the Department for Sustainable Development, within the General Secretariat of the Government, is responsible for coordinating and monitoring the implementation of SDGs at national level. The Department is coordinated by a State Councillor under the Prime Minister. The need for revising the structure was also highlighted by the Department for Sustainable Development stating that the current institutional structure is not appropriate for the implementation and monitoring of SDGs. Moreover, as from 2011, the Inter-ministerial Committee entered a hibernation phase about its main original task of coordinate environmental protection.

In terms of international, regional and bilateral environmental cooperation, the Ministry of Foreign Affairs plays an important role, assessing the political pertinence of acceding to international agreements and assessing their conformity with the Constitution, the international obligations of Romania and the Romanian legislation in force.

The Recommendation 4.3, which ask the then Ministry of Environment and Forests to (a) develop a mechanism to promote dialogue with the private sector on national and international environmental issues; and (b) facilitate the active participation of the private sector in international cooperation on the environment and the green economy, has not been implemented.

6.7 Assessment, conclusions and recommendations

Assessment

Since 2012, Romania has ratified the most recent MEAs, such as the Minamata Convention, the Paris Agreement and the Nagoya Protocol. Despite Romania’s accelerated alignment to EU requirements and international environmental obligations, the level of implementation of MEAs remains low and the enforcement assessments

\textsuperscript{119} Romania Climate Change and Low Carbon Green Growth Program, OUTPUT A2.3, Building Institutional Capacity for Implementing the National Climate Change Strategy in Romania.
are not a common practice. Information about the implementation of policies related to MEAs, their results and their achievements and impacts is very scarce.

NGOs are never included in the Romanian delegations to MEAs’ meetings of parties or conferences of parties; neither are they involved in the preparation of country position for international meetings. However, NGOs are sometimes involved in the preparation of national reports or in projects related to the implementation of MEAs.

Romania has made an effort to achieve the SDGs targets 15.7 and 15.c, both of which are measured by the global indicators 15.7.1 and 15.c.1 (Proportion of traded wildlife that was poached or illicitly trafficked), but data of value of legal and illegal trade are still missing. Besides, no data are available to assess the achievement of the SDG target 11.4 measured by the indicator 11.4.1 (total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage). However, several measures taken by Romania are expected to contribute to achieve it. An attempt to elaborate a strategic framework for culture, with an action plan and an allocated budget, resulted in two draft strategic documents not yet approved by a GD (a sectoral strategy for culture and national heritage for the period 2014–2020 and a national strategy for culture and national heritage 2016–2022). There were also developments in achieving SDG target 6.5 as the value of the indicator 6.5.2 (Proportion of transboundary basin area with an operational arrangement for water cooperation) was 100 per cent in 2018. The implementation of SDG target 12.1 measured by the global indicator 12.1.1 (Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production) is under way.

The Recommendation 4.1 made by the second EPR of Romania is not implemented as the draft of a strategy for international cooperation was not prepared. The implementation of the Recommendation 4.2 concerning the provision of an appropriate number of qualified staff to ensure the implementation of obligations under MEAs by increasing absorption of relevant EU funds devoted to strengthening capacity-building and to supporting the training of professionals, is in progress. Significant investment was made with the support of cohesion policy funds in the training of civil servants during the 2014–2020 programming cycle. The Recommendation 4.3 about the development of a mechanism to promote dialogue with the private sector and facilitate its participation in international cooperation on the environment and the green economy is not implemented. By amending the GEO No. 195/2005, the Recommendation 4.4 asking the Ministry of Environment and Forests to clearly identify budget sources which will be devoted to complying with the financial obligations under the EMEP was implemented.

Conclusions and recommendations

Biological diversity

Efforts have been made by Romania to comply with its international reporting obligations on biological diversity; in some cases, however, the deadline for sending the report has not been met. For example, the submission of the sixth national report to the Convention on Biological Diversity is pending since December 2018 and the new revised NBSAP, posted on the Ministry’s website for public consultations in 2018, has not been developed further. Reporting to MEAs and non-binding processes implies collection of data which are often difficult to gather due to hardware and software maintenance costs and the need for trained personnel.

Recommendation 6.1:
The Government should improve the content of national reports, by including relevant and updated information at national level, to meet reporting obligations and increase efforts to fulfil its reporting obligations under multilateral environmental agreements, especially under the Convention on Biological Diversity.

European Structural and Investment Funds

As at December 2019, Romania has used one third of the European Structural and Investment Funds, totalling €30.84 billion, available to it. The country has to guarantee an average contribution of around 15 per cent of the total in order to spend the remaining two thirds by 31 December 2023.

Recommendation 6.2:
The Government should adopt the necessary measures to accelerate the use of the European Structural and Investment Funds, including in the 2014–2020 cycle.
The Inter-Ministerial Committee for the Coordination of the Integration of Environmental Protection into Sectoral Policies and Strategies at the National Level had been inactive after 2007 but became more active again in 2011 when it was given responsibilities for coordination of sustainable development in Romania. It has been working thus far in a role to support sustainable development.

In 2018, the Government created the Department for Sustainable Development within the General Secretariat of the Government. This has caused uncertainty as the roles of the ministry in charge of the environment, and the Inter-Ministerial Committee, in the management of sustainable development and green economy. Consequently, work on commitments on green economy has stopped.

**Recommendation 6.3:**
*The Government should:*

(a) Revitalize the Inter-Ministerial Committee for the Coordination of the Integration of Environmental Protection into Sectoral Policies and Strategies at the National Level and give it a clear mandate, combined with the necessary resources, to exercise inter-ministerial coordination functions and to monitor the implementation of international obligations on the environment, or related to the environment, assumed by Romania;

(b) Support the ministry in charge of the environment to ensure that multilateral environmental agreements are implemented also in other sectors and other ministries.

**Transport, health and the environment**

Studies show that the road transport is increasing, and rail transport is diminishing. Consequently, the amount of air pollution from the transport sector is growing, road congestion is escalating and the health of the population is worsening. Transport policies are managed by different actors, mainly by the ministry in charge of transport, dealing with infrastructure, but also by local authorities, dealing with local transport. Despite the deteriorating situation, Romania was not taking part in the Transport, Health and Environment Pan-European Programme (THE PEP) in 2019.

**Recommendation 6.4:**
*The authorities in charge of the environment, health and transport should:*

(a) Identify responsible units or departments within environment, transport and health authorities to engage in the Transport, Health and Environment Pan-European Programme;

(b) Set up a mechanism involving relevant stakeholders to coordinate policies related to transport, health and the environment with an effective exchange of information;

(b) Identify policies and good practices based on the experience acquired within the Transport, Health and Environment Pan-European Programme to be implemented in the country.

**Desertification**

Romania is a country particularly and severely affected by desertification. Stopping this trend requires the adoption of strong public policies and appropriate instruments that reduce the factors that contribute to desertification. The agri-environment incentive package of the Rural Development Programme 2014–2020, which aimed specifically to address desertification issues, did not produce the expected results. This could indicate that the instrument chosen was not the most adequate. The country has not set land degradation neutrality targets, which could be instrumental in revitalizing the National Action Plan to Combat Desertification and contributing effectively to halt the current trend Romania faces with regard to desertification.

**Recommendation 6.5:**
*The Government should request the ministries in charge of the environment, regional development and agriculture to:*

(a) Set land degradation neutrality targets;
(b) Evaluate the agri-environment measures implemented so far and draw up and implement new ones that are efficient for the purpose for which they are intended.

**Indicators of Sustainable Development Goals**

Due to the lack of data on the indicators 15.7.1 and 15.c.1 (Proportion of traded wildlife that was poached or illicitly trafficked), it is difficult to assess the implementation of SDG target 15.7 (Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products), and target 15.c (Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities). No data are available to assess the achievement of SDG target 11.4 (Strengthen efforts to protect and safeguard the world’s cultural and natural heritage), measured by the global indicator 11.4.1 (Total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage, by source of funding (public, private), type of heritage (cultural, natural) and level of government (national, regional, and local/municipal)).

**Recommendation 6.6:**
The National Institute of Statistics, in cooperation with the Department for Sustainable Development and other relevant authorities, should ensure the collection of data for global SDG indicators 15.7.1, 15.c.1 and 11.4.1.

**Strengthening the implementation of the Carpathian Convention**

Romania is Party to the Framework Convention on the Protection and Sustainable Development of the Carpathians Carpathian Convention and has ratified its five Protocols and accepted the amendment on climate change. The country would like to host the secretariat of the Convention. However, as at October 2020, only one staff in the ministry in charge of the environment, water and forests, is in charge of coordinating implementation activities under the Convention and its Protocols, which makes difficult to organize all activities in an adequate and timely manner in line with the full potential of the country, given the large area of the Carpathians located in Romania.

**Recommendation 6.7:**
The Government should enhance institutional coordination and administrative capacity for the implementation of the Framework Convention on the Protection and Sustainable Development of the Carpathians.

**Participation in environmental agreements to which Romania is not party**

Romania is Party to most global and regional MEAs. Romania is not Party to the Convention for the Control and Management of Ships’ Ballast Water and Sediments, nor to the 2009 Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.

**Recommendation 6.8:**
The Government should consider accession to:

(a) The Convention for the Control and Management of Ships’ Ballast Water and Sediments;
(b) The International Convention for the Safe and Environmentally Sound Recycling of Ships.
Chapter 7
CLIMATE CHANGE

7.1 Current and foreseeable environmental and economic impacts from climate change

Environmental impacts from climate change

Weather

According to the World Bank 2018 report “From Uneven Growth to Inclusive Development: Romania's Path to Shared Prosperity” in the next 50–100 years, increases in the annual average temperature could be in the range of 0.5°C–1.5°C in 2029 and in the range of 2.0°C–5.0°C by 2099, depending on the global climate change scenario used. Bucharest should rank as the fifth fastest warming city in the world with a summertime high temperature increase of 4–8°C in the year 2100.

Analysis of precipitation data for the interval 1901–2016 revealed no tendency in the overall annual amount of precipitation with increasing trends in autumn and decreasing trends in other seasons. The total amount of annual precipitation could decrease by 10–30 per cent at the end of the century, depending on climate models and part of the country, with more irregular patterns and more frequent locally intense rainfall and hail.

Recent studies have calculated an important increase in the frequency of days with very heavy precipitation and the annual total wet-day precipitation. There are also indications that while snowfalls are shorter, they are becoming more intense.

Extreme weather events

Heat waves in the summer and severe snow blizzards in the winter have become more frequent in the last decade. Most of the weather stations in the country have seen increasing trends in all heat wave parameters like number, frequency, maximum and duration. This trend is more pronounced in the south-eastern, southern and western plains.

In 2012, a major heat wave occurred in Romania with temperatures up to 42°C. In 2017 and 2019, warnings for extreme heat were issued.

Extreme heat hazard is classified as medium in most parts of the country, based on modelled heat information which means that there is a 25 per cent chance that a prolonged period of extreme heat will occur in the next five years. Due to the effect of urban heat islands in case of heat waves, urban agglomerations will experience increased heat stress.

Climate change scenarios estimate a 20 per cent chance of severe droughts in the next 10 years, especially in the south-western and north-eastern parts of the country. This affects almost 50 per cent of the total agricultural land. The scenarios calculate that droughts by decreasing river flow will become more frequent and more severe. The forest fire hazard is classified as high and modelled projections of future climate show an increase in the frequency of weather in Romania that favours forest fires. Climate projections also indicate an increase in the severity of such fires.120

Severe snow blizzards occur almost each winter, with especially extreme frost- and snow periods in 2012, 2014, and 2016–2019, causing havoc and deaths.

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120 2019 Global Facility for Disaster Reduction and Recovery www.thinkhazard.org
Episodes with large amounts of rainfall will be more frequent especially in mountainous areas. In combination with accelerated deforestation an increase in the frequency of episodes with large precipitation will lead to an increased incidence of flash floods.

Romania is one of the most flood-prone countries in Europe. Between 2002 and 2013 this has led to 183 fatalities. Flooding due to extreme rainfall in a short time often occurs in Romania. More than one million hectares of land are exposed to flooding while nearly one million inhabitants live in high-risk areas. In 2013 flash floods caused nine deaths and nearly 7,000 people had to be evacuated.

Climate change impact is expected to raise the number and effects of flooding as well as the occurrence of landslides in springtime when the snow melts.

**Water resources**

Fresh water resources in Romania are mainly fed from surface sources, i.e., Danube and inland rivers and are also fed and regulated by sources in the Carpathian Mountains and the more than 400 dams and 11 reservoirs. Groundwater sources deliver less than 10 per cent of the fresh water. Natural variations in the rainfall and snow in the mountains will be more prominent in the future due to climate change. As Romania’s water supply is dependent on weather systems, cities and regions are vulnerable for these variations. Shorter winters and higher temperatures lead to higher evaporation, 10–20 per cent lower river flows, and possible deterioration of the water quality by higher mean temperatures, and lower dilution and oxygen content that may influence the fish populations.

Other vulnerabilities are the decrease of the soil humidity, decrease of underground water supplies, reduced availability of water for the provision of drinking water and recreation areas. Increase of flooding due to extreme precipitation caused by climate change can have an adverse effect on the water quality by diffusion of industrial and agricultural pollutants. These effects will increase if the irrigation will increase. Measures to preserve the aquatic ecosystems are shifting in Romania from hydrological technical works like dams to ecological approaches like the EU “Space for the river” strategy.

Measurements and calculations based on climate change models predict a long-term increase of the water level in the Black Sea with a rate of approximately 0.19 cm/year. For the sea temperature near Constanta, the trend of surface water temperature for 1950–2016 is an increase of 0.02 °C/year, i.e., by 1.32 °C warmer in 2016. The National Institute for Hydrology and Water Management within Romanian Waters carried out studies on the impact of climate change on river flow regimes and river basins in Romania in the period 2011–2018. Results of the modelling studies (decrease of multi annual discharge regimes) have been published and presented in the yearly Danube Conferences.

**Land and soil**

Seismic risks are present in Romania and although not directly connected to climate change, seismicity may be affected by climate change effects like altering reservoir levels or the use of groundwater.

Inefficient farming practices in the past have led to soil deterioration and erosion. Rise of the annual mean temperature will increase the number of drought periods in the country. In a scenario with an annual mean temperature that is 3°C higher in 2070, 38 per cent of the territory will be affected by severe dehydration and almost 30 per cent of the country faces the risk of desertification.

Climate change is likely to increase soil erosion by water through its effect on rainfall intensity, vegetative cover and patterns of land use. These factors may lead to more and heavier landslides. Increase of landslides as an effect of climate change may lead to increased pollution of water resources by polluted soil. In several counties in Romania threshold values for soil pollution by heavy metals like lead, copper, chromium, mercury and arsenic are exceeded in rural as well as urban areas. For lead and copper, even alert threshold values are exceeded in some places.

Products from crude oil refining like benzene, toluene, and polycyclic aromatic hydrocarbons are also one of the main sources of soil contamination in Romania. The toxic properties of these contaminations have negative effects
on the soil quality and -use and are a risk for agricultural products, water resources and human health. The CAMARO-D project (Cooperating towards Advanced Management Routines for land use impacts on the water regime in the Danube River Basin) aims to harmonize and improve the protection of water resources against negative impacts of land use and climate change and the reduction of flood risk.

**Forests and other natural vegetation**

The main consequences of climate change, resulting from the increase of temperature and longer drought periods, on forests in Romania are:

- The acceleration of the devitalization process and abnormal drying of trees, mainly in regions affected by droughts, steppe and forest-steppe respectively;
- The change of the natural Romanian geographic zones, steppe zone translated into semidesert, forest-steppe into steppe, plain forestry zone into forest-steppe. Also, there has been a soft evolution in the altitudinal change of several species, with an increasing tendency of forestry vegetation limit;
- A reduction of the growing process of the forests displaced at the plain ground level, which is partially compensated by additional accumulation of biomass in the mountain area;
- An increase in the forest vulnerability to the destabilizing factors: insect attacks, heavy wind, forest fires;
- A decrease of the soil quality, through an increase of soil acidity and alteration of the organic layers.

**Biodiversity**

Climate change induced meteorological effects like higher temperature and less rainfall will lead to changes in speed of growth or behaviour and migration of plants and animal species. Wetlands, high mountain lakes and their flora and fauna and freshwater aquatic ecosystems will be affected by rising water temperatures and sea levels. The Danube Delta, which is a Ramsar site (salination), the Carpathian Mountains (change in vegetation, disappearance of alpine areas) and the Dobrogea region (desertification of steppes) are most vulnerable for alterations in the structure of their habitats.

Main threats on the Romanian biodiversity due to extreme events characteristic for climate change are:

- Modification of species behaviour, as a result of the stress induced on their adaptation capacity (a shorter hibernation period or lack thereof, affecting bears and bats in particular);
- Modification in the distribution and composition of native habitats as a result of the change in species distribution, the most vulnerable habitats being wetlands, high mountain lakes, rivers and streams, marine and freshwater aquatic ecosystems affected by water heating and sea level rise;
- Increased invasion of exotic species at the level of the natural habitats and increased potential to become invasive;
- Threats to wild animals, especially those with low-moving capacity and with low-population species, due to increased forest fire risk in the Carpathian Mountains;
- Increased risk of soil erosion in the Carpathian Mountains;
- Extinction of certain species of flora and fauna, in particular species with unfavourable conservation status.

**Human Health**

As a consequence of the expected increased frequency of heat waves in the next decades, increased thermal stress in summertime would lead to a greater risk for human health. Urban areas will be most affected by the accumulation of heat in concrete and other building materials and the greater presence of combustion engines from industry and traffic. For EU countries it is estimated that each 1 °C increase in temperature could increase mortality by 1–4 per cent. Other extreme weather events like flooding, storms and extreme droughts, will be more frequent and cause more victims. A temperature increase for long periods of time can lead to fires and droughts that may lead to an increase of 25 per cent in respiratory disorders, especially in the most vulnerable ages. Psychological effects may occur because of exposure to natural disasters which can have consequences related to increased stress, post-traumatic issues, depression and anxiety.
Other phenomena with possible effects on human health are the occurrence of insect-borne diseases (mosquitos, ticks, sand-flies) and the availability of clean drinking water. Human health is also influenced by the relationship between climate change, global warming and air pollution e.g., by the formation of low altitude ozone which can lead to irritation of the respiratory system, increasing the number of respiratory disorder cases.

Economic impacts from climate change

As of December 2019, no systematic evaluation of the economic impacts of climate change on the different sectors in Romania was carried out. However, in the MECC/World Bank project “OPERA-CLIMA, Component B”, (2013–2014) sectoral rapid assessment reports have been drawn up to incorporate climate actions in the 2014–2020 sectoral operation programmes to manage global warming in Romania. In Component C, dissemination notes for different sector analysis a marginal abatement cost analysis of mitigation measures in selected key sectors have been performed. The dissemination notes include estimated costs of adaptation measures for the sectors of energy, agriculture, forestry, transport, urban and water. It also includes additional information on cost and benefit of mitigation and adaptation measures.

Energy

Climate change will affect the seasonal electricity demand in Romania. Investments in the energy sector to enhance energy efficiency, install additional renewable energy sources and nuclear energy were in the CLIMA project estimated to be about €14 billion in the period 2014–2020. Scenarios to elaborate the consequences of the 2015 EU Emission Reduction Strategies (2020 Strategy, 2030 Framework and 2050 Roadmap) for Romania in the period 2015–2050 show overall investments that increase from €27.6 billion in the Baseline to €36.5 billion in the Green scenario and to €53.6 billion in the Super Green scenario. Installations using renewables, natural- or biogas have advantages above coal fired installations due to higher energy efficiencies, less air- and water pollution and less waste production.

Industry and mining

Climate change mitigation measures like the use of higher energy efficient equipment and a shift in energy sources will influence the energy use of the sector which represents a major part of the heat and power use in the country. This transition in energy use needs large investments for the industry and mining sector. An increase of extreme weather events like heavy rains, landslides and extreme heat, will affect the industry mainly by direct damage to plants and damage to infrastructure. Especially in the mining sector, extreme rainfall can lead to landslides and flooding of ponds and rivers, possibly causing heavy environmental damage.

Agriculture, fishery, apiculture

Agriculture is quite vulnerable to climate change, especially for the many small farms that mainly are for subsistence farming and that occupy half of the agricultural land. The Seventh National Communication on Climate Change indicates that as a result of climate change, the number of floods in Romania has already risen in the last decades. The economic consequences of the intensification of flooding on one hand and the increasing frequency of droughts on the other hand, are still to be established, taking into account the cost of measures that are expected for modernization and mechanization in the agricultural sector and the measures to prevent further soil erosion and desertification. The consequences are not equally distributed over the agricultural sector due to regional differences in the probability of negative impacts, differences in the vulnerability, resilience and adaptive capacity and the difference in farm structure and size.

Forestry

The forest productivity is expected to decrease as a result of climate change, due to the expected increased frequency of forest fires and biological effects like infestations and plagues. No estimations available concerning the potential economic impacts of climate change damage on the forests are available in Romania. Sustainable forest management, including the combat against illegal logging, and afforestation of abandoned agricultural areas are adequate measures to reverse the effects of climate change which requires effective national and EU funding. Forestry can provide additional abatement of 1.8 Mt CO$_2$-eq. per year at a total cost of €115 million in the period 2015–2050. Analysis of different scenarios, afforestation, sustainable management of protected forests
and sustainable management of forest production lead to the prognosis of a final benefit of €86 million for the period 2015–2050.

**Transport**

Increase of intense rainfall will led to an increase in flooding that will damage roads and railway tracks and affect moisture levels in the soil, which degrades the stability.

Vulnerability assessments for the different transport modes have been undertaken and emergency preparedness and resilience infrastructure measures are in development. The greenhouse gases (GHG) emissions of the transport sector are expected to grow in the future due to the still rising number of cars. Green scenarios for 2015–2050 will lead to an emission reduction of 2–3 Mt CO$_2$-eq. yearly compared with the Business as Usual (BAU) scenario. The cost of the necessary investments depends on the scenario and are estimated from €135 million (Green Scenario) to €1.7 billion (Super Green Scenario) over the period 2015–2050.

**Water**

Climate change impacts on the water sector in Romania are a projected annual mean precipitation decrease of 5–20 per cent in the second half of the 21st century, compared with the second half of the 20th century. In summer, droughts and water stress are expected to increase and in winter more flooding events are probable. Investment in adaptation measures will reduce the risks of climate change for water supply, hydropower generation and agricultural production in Romania. The costs of these adaptation measures have been estimated for Green and Super Green scenarios (moderate vs ambitious adaptation plan). The estimated revenues will exceed the cost with €1.8 billion and €11.0 billion over the period 2015–2050 respectively.

**Housing and urban**

Houses and other residential buildings must be built more resilient to the effects of extreme weather events caused by climate change while the existing residential buildings must be adapted too. Not only adaptation to extreme weather events caused by climate change but also large investments to decrease the seismic risk and to enhance energy efficiency are necessary, according to the National Housing Strategy. The energy-efficiency of residential buildings is still very low. In the Regional Operational Programme 2014–2020 for Romania (European Regional Development Fund) measures are proposed and implemented financed from the European Regional Development Fund and state funding up to €1.1 billion.

**Tourism and leisure**

The possible economic impacts on tourism and leisure for Romania have not yet been evaluated in detail.

**Healthcare systems**

The WHO differentiates health costs related to climate change into impact costs and adaptation costs. Impact costs are costs of direct treatment, reduced productivity and loss of food or physical security while adaptation costs of healthcare systems should result in overall savings in the end. In Romania a detailed, vulnerability, impact and adaptation assessment of climate change effects on healthcare in which the economic impacts too can be estimated has not yet been carried out. The combustion of fossil fuels is the most important cause of climate change that also contributes to outdoor and indoor air pollution, which combustion, if not adequately abated, has major effects on public health. Recent studies indicate that the economic cost of mitigation measures will be more than compensated by the gains for healthcare.

### 7.2 GHG emissions from economic sectors

**National Inventory**

Romania produces and regularly updates its GHG inventory; as an Annex I Party to the United Nations Framework Convention on Climate Change (UNFCCC) and EU Member States. The National Inventory Report and national communications are in line with the provisions in the guidelines for the preparations of national
Part II: Domestic – international interface

communications and national inventory reports by the Parties that are included in Annex I to the UNFCCC and its Kyoto Protocol. The Seventh National Communication on Climate Change and the Third Biennial Report were submitted in 2017. The Communication provides information on sectoral strategic plans and measures that contribute to achieve the GHG reduction targets according to the Kyoto Protocol and the EU climate and energy targets for 2020 and 2030.

The Ministry responsible for the environment approved the National GHG Inventory; NEPA is the competent authority to administrate the inventory’s arrangements and system, and to submit the Inventory to the UNFCCC secretariat. The European Environmental Agency (EEA) and the EC have the supervision on the deadlines for reporting. The Recommendation 10.2 made in the second EPR of Romania asking the Government to clear out the irregularities and deficiencies of the National GHG Inventory System to be able to return to the European Union emissions trading scheme was implemented and the compliance requirements have been fulfilled.

In May 2019 Romania submitted its 27th National GHG Inventory in which it produced the (common report format) tables and database containing estimate on emissions and removals and background data for the National Inventory Report 2019 comprising the 1989–2017 period (figure 7.1). The sectors characterized are Energy, Industrial Processes and Product Use, Agriculture, Land Use, Land-Use Change and Forestry (LULUCF) and Waste. Data in the National Inventory Report concern the direct GHGs mentioned in Annex A of the Kyoto Protocol: CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and NF₃ as well as the indirect GHGs (NOₓ, CO, NMVOC and SO₂).

Figure 7.1: GHG emissions trend per sector, 1989–2017, Gg CO₂-eq.

Note: LULUCF includes net CO₂, CH₄ and N₂O.

The estimation of the emissions and removals of GHG from LULUCF follows the methodology presented in the 2009 Guidelines for National Greenhouse Gas Inventory of the Intergovernmental Panel on Climate Change (IPCC) and the 2013 Supplement to the 2006 Guidelines for National Greenhouse Gas Inventories: Wetlands (Wetlands Supplement). The LULUCF trend is determined by CO₂ removals in the IPCC category Forest land remaining forestland with a little contribution from other IPCC categories.
**General emission trend**

The total GHG emissions excluding LULUCF have decreased from 306,690 Gg CO₂-eq. in the base year in emissions in 1989 to 113,796 Gg CO₂-eq. in 2017, which is an overall reduction of 63 per cent. Including LULUCF the GHG emissions decreased from 289,617 Gg CO₂-eq. to 92,116 Gg CO₂-eq., constituting a reduction of 68 per cent. In the last decade of the 20th century the GHG emissions decreased with more than 50 per cent due to the transition of Romania to a market economy, including the restructuring of the economy, the disappearance of inefficient industries and the start-up of the first reactor at the Cernavoda nuclear power plant. In the period 2000–2008 GHG emissions slightly increased and later stabilized as consequence of the economic revitalization. Due to the global financial and economic crisis, GHG emissions decreased again in the period 2009–2012 and stabilized in 2013–2017. In 2017, GHG emissions per capita were 5.81 tons CO₂-eq., which was below the EU-28 mean value of 8.45 tons CO₂-eq. per capita.

In 2017, excluding LULUCF, the largest contributing substance to the GHG emissions is CO₂ on average 66 per cent followed by CH₄ on average 25 per cent and N₂O on average 7 per cent. The remaining GHGs (HFCs, PFCs, SF₆, NF₃) contribute around 2 per cent.

**Emission trends by gas**

CO₂ emissions, excluding LULUCF, have decreased from 208,946 Gg in 1989 to 74,998 Gg in 2017, i.e., by 36 per cent. This development is mainly caused by the decrease of fossil fuel combustion in the energy sector as result of the decreased activities in the public electricity and heat production, the manufacturing industry and the construction sectors. CH₄ emissions have decreased by 61 per cent in 2017 compared with 1989, mainly due to the reduction of the animal husbandry in the country. N₂O emission in 2017 has decreased by 59 per cent compared with the base year emission in 1989 due to the reductions of the animal husbandry and application of N synthetic fertilizers on soils. Fluorocarbon emissions showed a strong decrease (99.5 per cent) for the PFCs emissions from the primary aluminium production and an increase for HFCs and SF₆ emissions. The contribution of these substances increased to 2 per cent of the total GHG emission expressed in CO₂-eq.

**Emission trends by sector**

Emission removals from LULUCF are estimated at 21,680 Gg in 2017 (19 per cent of the GHG emission excluding LULUCF). In 2017, the energy sector was responsible for 66.4 per cent of the total GHG emissions excluding LULUCF of 113,796 Gg CO₂-eq, the Industrial Processes and Product Use sector for 12 per cent, the Agriculture sector for 17 per cent and the Waste sector for 5 per cent (figure 7.2).

![Figure 7.2: GHG emissions excluding LULUCF, 2017, percentage](image_url)

*Source: National Greenhouse Gas Inventory, 2018.*
Part II: Domestic – international interface

Energy

GHG emissions from the energy sector comprise emissions from the energy industries, manufacturing industries, constructing, transport and other subsectors in accordance with the categories of the Intergovernmental Panel on Climate Change. By 2017, emissions had decreased by 65.4 per cent compared with the base year emission in 1989. The largest decrease occurred in the years 1989–1992 due to the reduction of activities in energy intensive industries. After some increase due to economic revival in the period 1993–1996, GHG emissions decreased again by the start-up of the first reactor of the nuclear power plant in Cernavoda. In the period 2000–2008, GHG emissions stabilized, but after 2008 there was a slight tendency of decrease due to the economic crisis and shift in use of primary energy sources. (more use of natural gas).

In 2018, 58 per cent of the electricity in Romania was produced by hydropower, nuclear energy and renewable energy (wind, solar energy, biomass) and 42 per cent by thermal power plants (60 per cent coal, 40 per cent gas and oil). In the period 2010–2017 the share of coal in the electricity production decreased with 15 per cent and the share of hydroelectricity decreased by 25 per cent. The share of natural gas increased with 30 per cent and the combined wind and solar share increased by a factor of 30. The share of nuclear energy remained stable in this period.

The residential sector contributes to 10.1 per cent of the total GHG emissions in the Energy sector and 6.7 per cent of the total GHG emissions excluding LULUCF. The combustion of natural gas and biomass delivered the main contribution to the emissions. GHG emissions in this subsector of the Energy sector have decreased by around 14 per cent since 1989, mainly due to the decrease in the number of inhabitants. The insulation level of the residential, commercial and institutional buildings is still relatively low.

The combustion emissions from the agriculture sector in the last ten years are around 2,000 kt CO₂-eq./year.

According to EIA, CO₂ emissions from fuel combustion (SDG target 9.4 - indicator 9.4.1 (CO₂ emission per unit of value added) decreased by 12.5 per cent from 2011 to 2017. During the same period CO₂ emissions per unit of manufacturing value added (MVA) decreased by 31.4 per cent while the CO₂ emissions per unit of GDP diminished 31.4 per cent (table 7.1).

<table>
<thead>
<tr>
<th>Table 7.1: Series under the global SDG indicator 9.4.1, 2011–2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CO₂ emissions from fuel combustion (millions of tonnes)</strong></td>
</tr>
<tr>
<td><strong>CO₂ emissions per unit of manufacturing value added</strong> (kilo grams of CO₂/constant 2010 US$)</td>
</tr>
<tr>
<td><strong>CO₂ emissions per unit of GDP</strong> (kilogrammes of CO₂/constant 2010 US$)</td>
</tr>
<tr>
<td><strong>2011</strong></td>
</tr>
<tr>
<td>80.859</td>
</tr>
<tr>
<td>0.36</td>
</tr>
<tr>
<td>0.23076</td>
</tr>
</tbody>
</table>


Industrial processes and product use

In 2017, mineral industry, metal industry and chemical industry have the highest share of GHG emissions of the Industrial Processes and Product Use sector, 34.5 per cent, 29.2 per cent and 10.2 per cent respectively. Compared with 1989, GHG emissions from this sector in 2017 have decreased by 70.2 per cent, mainly due to the decrease of the industrial production. In the period 1989–1992, GHG emissions dropped by more than 50 per cent; after a period of relatively stabilization until 2008, GHG emissions dropped again by almost 50 per cent due to the economic crisis and are slightly increasing in the last few years. Changes in technology in the aluminium production have led to a 99 per cent reduction of PFC emissions since 1997.

Agriculture, fishery and apiculture

GHG emissions from the agriculture, fishery and apiculture sector are CH₄ emissions from enteric fermentation, manure management and rice cultivation; N₂O emissions from agricultural soils, manure management and field burning; and some CO₂ emissions from lime and urea application. Two thirds of GHG emissions from this sector
comes from CH$_4$ and one third from N$_2$O. This sector emitted 50.8 per cent less GHG emissions in 2017 than in 1989. The causes of this decrease are the decline of livestock, except for goats, the decrease of rice cultivated areas and crop productions levels and the diminished use of fertilizers.

**Land use, land-use change and forestry**

According to the latest data of the National Institute of Statistics, agricultural lands, including arable, orchards, vineyards, pastures and hayfields makes up 62.2 per cent of the territory. Forests cover 27.9 per cent while constructed areas, roads and railways, cover some 4.9 per cent, humid areas, water and lakes some 3.5 per cent and other land 2.1 per cent. The CO$_2$ sink increased from 2011 to 2016; but in 2017 again decreased.

**Transport**

In 2017, GHG emissions from the transport sector represented 23.8 per cent of the total emissions within the Energy Sector and 15.8 per cent of the total GHG emissions excluding LULUCF. The transport sector includes GHG emissions from road transport, railways, domestic aviation and navigation and other transportation (table 7.2). The GHG emissions from road transport represent 96.13 per cent of the GHG emissions in this sector, followed by the railway emissions, domestic aviation and -navigation emissions and others.

The GHG emissions from road transport increased 92 per cent in the period from 1989 to 2017 due to the strong growth of the number of vehicles. The road vehicle fleet increased by 106 per cent from 2000 until 2018. In 2018, about 79.31 per cent of the road vehicles were older than 10 years. The emissions from passenger cars contributed to 50.9 per cent and heavy trucks and buses for 34 per cent. In other transport categories GHG emissions have fluctuated and there was no strong growth of emissions.

**Table 7.2: Contribution of the GHG emissions from categories in the transport sector, 2017, per cent**

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road transportation</td>
<td>96.10</td>
</tr>
<tr>
<td>Railways</td>
<td>2.28</td>
</tr>
<tr>
<td>Domestic aviation</td>
<td>0.83</td>
</tr>
<tr>
<td>Domestic navigation</td>
<td>0.74</td>
</tr>
<tr>
<td>Other transportation</td>
<td>0.02</td>
</tr>
</tbody>
</table>

*Source: National Greenhouse Gas Inventory, 2018.*

**Waste**

GHG emissions from the waste sector gradually increased in the period 1989–2017 by 14.7 per cent. The amount of waste in the country has grown, but the number of managed landfills with methane recovery installations has also increased. In the period 1989–2017 GHG emissions from the solid waste disposal subsector increased by 171.5 per cent due to the increased trend of waste generation while GHG emissions for the wastewater treatment and discharge subsector decreased by 42.2 per cent due to the decrease of the population and an increase in the number of inhabitants that are connected to sewerage, plus the decreasing level of industrial production.

**7.3 Legal, policy and institutional framework**

**Legal Framework**

Romania ratified the United Nations Framework Convention on Climate Change in 1994 (Law No. 24/1994), the Kyoto Protocol under the UNFCCC in 2001 (Law No. 3/2001) and Paris Agreement in 2017 (Law No. 57/2017). Romania accepted Doha Amendment to the Kyoto Protocol in 2015 (Law No. 251/2015).

**Environment**

Romania’s legislation contains national legal acts related to the administration of the National Greenhouse Gas Inventory, which consists of three GDs, five MOs by the ministry in charge of the Environment and a Protocol of Collaboration between the same ministry, NEPA and the Ministry of Interior. Additional national legal acts
are related to the administration of the EU Emission Trading Scheme and of the Union Registry of Greenhouse Gases emissions in Romania (GD No. 1570/2007 and seven MOs).

General environmental regulations, including climate change aspects, are provided according to the GEO No. 1995/2005 on environmental protection. The Ordinance provides the main responsibilities and obligations for the central public authority in charge of environment and for the other responsible entities, including private individuals.

Other sectors


Policy framework

The Nationally Determined Contribution (NDC) of the EU and its Member States under the Paris Agreement entered into force in November 2016. Romania is committed to the binding target of an at least 40 per cent domestic reduction in GHG emissions by 2030 compared to 1990 under the EU wider 2030 climate and energy framework, to be fulfilled jointly as set out in the conclusions by the European Council of October 2014. Key targets of the 2030 Climate and Energy Framework are an at least 40 per cent cut in GHG emission from 1990 levels, at least 32 per cent share for renewable energy and at least 32.5 per cent improvement in energy efficiency. As a long term target the EU aims to reduce its GHG missions by 80–95 per cent in 2050.

The 2013 National Climate Change Strategy (2013–2020) (GD No. 529/2013) includes post-Kyoto objectives, targets and actions for mitigation and adaptation of climate change effects. The adaptation component of the strategy was elaborated to provide guidelines and individual action plans for 13 different sectors. Because the Strategy did not contain clear schedules of measures and indicators, necessary for a national action plan, the then Ministry of Environment, in cooperation with the World Bank, implemented a project to provide advisory services on climate change to operationalize the Strategy. This project, called OPERA-CLIMA, aimed to enable Romania to advance towards attaining the “Europe 2020 Strategy” and was implemented in the period 2013–2015. The first components (A and B) of the project were to develop and operationalize an updated and extended strategy and climate-related actions for priority sectors using state- and EU funding. The components C and D of the project provided for the development of a knowledge base for decision making and capacity building knowledge.

Following the implementation of A and B components, the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2030 and the National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020 were approved in 2016 (GD No. 739/2016). Main objective of the Strategy was to quantify the targets for the GHG emission reductions in line with the EU commitments for 2030 and including the roadmap for 2050 to be implemented by the Action Plan. In the Action Plan for each priority sector and objective the actions are established with all financial and organizational details such as targets and sub targets, responsible parties, deadlines and funding.

The Strategy and the Action Plan establish the following strategic objectives on forest managements: management of existing forests, extension of wooded lands, encouraging sustainable management of forests that are private property by providing advice, technical support and compensatory payment to owners. The aim is the
conservation and enhancement of carbon stocks in the national forests. They contain provisions and measures on adaptation to climate change. Based on the above it can be concluded that the Recommendation 10.1 made in the second EPR of Romania, asking the Government to: (a) finalize and adopt the new strategy on climate change; (b) follow this up with a climate change action plan; and (c) draft and adopt a strategy on adaptation to climate change and its action plan, has been implemented.

Following the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action, Member States were requested to develop integrated national energy and climate plans, that would include their respective contributions to the collective EU targets and the necessary policies and measures to achieve these contributions by time tranches of 10 years. The Romanian Government notified the EU of its draft Integrated National Plan on Energy and Climate Change 2021–2030 in December 2018. The Plan is an obligatory and on common base structured plan resulting from the EU Energy Union strategy. The Plan has been jointly drafted by the Ministry of Energy and the Ministry of Environment, Waters and Forests. The document has been analysed by independent experts and provided with recommendations for improvement. In June 2019 it was assessed by the EC on the ambition of objectives, targets, contributions and adequacy of supporting policies and measures. The assessment comprises comments and recommendations for improvement and adaptation of the Plan, e.g., on the share of energy from renewable sources and the national contribution for energy efficiency, which were assessed to be too low. The draft Integrated National Plan on Energy and Climate Change has been updated by taking into consideration the recommendations and made available to the public. The revised (in the light of the European Commission recommendations) draft of the Plan was consulted with the public in February 2020 and the final document went through the screening phase of the strategic environmental assessment procedure in the April-May 2020, before being submitted to the European Commission[21].

The strategic vision is the growth of the energy sector under conditions of sustainability, based on a diversified and balanced energy mix. Clean energy, the increased use of renewable energy sources and an increased energy efficiency are expected to support the GHG reduction targets for 2030 and 2050 set by EU. Important factors will be the price of certificates of the EU ETS or coal fired power plants, the cost of CO2 capture and storage and the decrease of costs for new technologies (wind, photovoltaic). The 2018 National Energy Strategy 2019–2030, with a perspective of 2050, incorporates results of implementation of the 2010 National Action Plan for Renewable Energy Sources and of the National Action Plan for Energy-efficiency III for 2014–2020 (GD No. 122/2015). Key strategic investments that are outlined in the revised document, are two new units at the Cernavoda nuclear power plant, a reversible hydropower plant at Tarnita Lapustesti, a hydropower plant at the Danube in partnership with Bulgaria and a new 600 MW coal fired power plant in Rovinari. Total investments are expected to be between €15 to €30 billion.

The National Energy Strategy and the draft Integrated National Plan on Energy and Climate Change 2021–2030 include key objectives, policies and measures for mitigation and adaptation in the energy production sector. The main operational objectives related to decarbonization and energy efficiency are a diversified and balanced energy mix containing advanced energy technologies and the development of means of production with low GHG emissions (nuclear, RES, hydropower). Another key objective is energy storage and back up capacities by development of electricity storage via hydro-electric pumping and by building the Tarnita Lapustesti reversible hydropower plant. New power generation capacity to replace old fossil fuel power plants to be decommissioned are required to be equipped with energy innovative techniques.

In the framework of the National Action Plan for Energy Efficiency III 2014–2020 under the Energy Efficiency Directive key directions are the promotion of high efficiency cogeneration, modernizing the centralized district heating systems of communities and increasing the energy efficiency for residential and public buildings and public lighting systems. The Action Plan describes mitigation an adaptation measures in policies and action plans for the priority sectors. Assessment of the results must be reported to the EU annually.

The General Transport Master Plan (GD No. 666/2016) describes investments of €27 billion in the road sector until 2030. Master plans for road and rail transport contain measures to increase energy efficiency and reduce emissions from transport. The plans focus on the implementation of relevant EU legislation on emission reduction and energy efficiency. The most important proposed measures in the 2011–2020 National Action Plan for the Reduction of GHG emissions in the Civil Aviation are the improvement of the efficiency of fuel used by at least

2 per cent per year and capping of CO₂ emissions from civil aviation sector, starting in 2020. For the Industrial Processes and Product Use sector increase of energy efficiency and Regulation (No. 517/2014) on fluorinated GHG (F-gases) which is applied since 2015 and aims at a reduction of these GHGs by two thirds in 2030 compared with 2015.

The National Rural Development Programme 2014–2020 was set up in line with the EU Common Agriculture Policy and the Europe 2020 Strategy. The strategic goals of the Programme are the restructuring and increasing the viability of agricultural holdings, sustainable management of natural resources and fighting climate change, diversifying economic activities, creating jobs and improving infrastructure and services for the improvement of the quality of life in rural areas. Measures in the Programme are expected to improve organic farming, afforestation and creation of woodland, use of extensive forestry techniques and payments for forest-environmental climate commitments. Key components for agriculture included the National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020 are knowledge transfer to farmers and rural stakeholders regarding the role and importance of climate change mitigation, especially on animal breeding and fertilizers use. Implementation results of the National Rural Development Programme 2014–2020 are the elimination of damages done by flooding, rehabilitation of communal roads, development of rural infrastructure and sewerage.

The National Forestry Strategy 2018–2027 states that the strategic vision of Romania is to have a forestry industry that contributes to the well-being of people in an economically, socially and environmentally sustainable manner. The Strategy includes measures for expanding wood areas to increase carbon sequestration, maintaining carbon storage capacity and continued adaptation of forests to climate change.

To reduce GHG emissions from non-compliant landfills to the Landfill Directive, in the period 2013–2017, 41 non-compliant landfills were closed. One of the proposals in the National Strategy for Waste Management 2014–2020 (GD No 870/2013) is the reduction of GHG emissions, which, however, increased in the period 1989–2017 by 14.7 per cent.

The SDS 2030 includes targets for the adaption and resilience to combat the dangers of climate change and natural disasters by integrating measures to reduce and adapt to climate change and natural disasters through strategies and national policies are described.

In 2017, the (then) Ministry of Regional Development, Public Administration and European Funds, published the Strategy for mobilizing investments in the renovation of residential and commercial buildings existing at national level, both public and private, version 2. The strategy aims to mobilize investments in the renovation of residential and commercial buildings, both public and private, in line with the Energy Efficiency Directive. The strategy describes different phases for renovation of existing buildings to achieve a substantial reduction of energy consumption and improve living conditions in residential buildings and workplaces.

*Building resilience and developing adaptive capacity to climate change*

Romania is pursuing the achievement of SDG target 13.2: Integrate climate change measures into national policies, strategies and planning. The National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions 2016–2030, the National Action Plan for the implementation of the National Strategy on Climate Change and Economic Growth based on Low Carbon Emissions 2016–2020 to implement the strategy, including the draft Integrated National Plan on Energy and Climate Change 2021–2030 and sectoral strategic documents, e.g., on transport, energy, agriculture, forestry and education, show a comprehensive integration of the challenges of climate change, expected effects and the possible adaptation measures into the different national and sectoral strategic documents.

Romania had in place a policy framework on risk management (GD No. 762/2008 on the approval of National Strategy of prevention of emergency situations; GD No. 846/2010 on the National Strategy for Risk Management in case of Floods, GEO No. 1/2014 on certain measures in the area of emergency management and amending and supplementing GEO No. 21/2004 on the National Management System for Emergency Situations). A National System for Emergency Situations Management comprised of central and local authorities (GEO No. 21/2004) was set up. Its function is efficient management in life-threatening situations during natural or man-made disasters.
Chapter 7: Climate change

In order to achieve the SDG target 1.5 (by 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate related extreme events and other economic, social and environmental shocks and disasters) and indicators 1.5.3, 11.b.1 and 13.1.2 (number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030), and 13.1.1 (number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population), GD No. 557/2016 on the approval of risk type management complemented the policy framework on risk management. After the adoption of the Sendai Framework in 2015, the Government has been actively working to establish a national platform for disaster risk reduction, which is an interdisciplinary, multi-sector entity for consultancy to the national authorities for drawing up disaster risk reduction strategies and programmes. The country intends to consolidate by 2030 a unified national system of emergency intervention, rehabilitation and compensation service in the event of natural disasters, industrial accidents or extreme weather events caused by climate change effects and other environmental shocks and disasters.

During the national disaster risk assessment (2015–2018) by the General Inspectorate for Emergency Situations along with 13 public authorities, five types of risk were prioritized and analysed: earthquake, floods, droughts, forest fires and epidemics. Management capabilities in Romania were assessed according to the Risk Management Capability Assessment Guidelines (2015/C 261/03). Designated competences and responsibilities are regulated in GD No. 557/2016. In line with the Sendai Framework for Disaster Risk Reduction 2015–2030, Romania has established a National Platform for Disaster Risk Reduction.

According to the United Nations Office for Disaster Risk Reduction, the number of missing persons due to disaster in Romania was 5 in 2006, 1 in 2008 and 1 in 2016. Table 7.3 shows selected series under in the global SDG indicator 1.5.1 (number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population) and global indicator 13.1.1.

Concerning the global indicators 1.5.4, 11.b.2 and 13.1.3 (proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies), and 13.1.3 (proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies) in Romania, besides the national bodies involved, (Department of Emergency Situations, General Inspectorate for Emergency Situations under the Ministry of Interior, other ministries), specific roles and responsibilities for disaster risk management are held at county level (e.g., County Inspectorates for Emergency Situations). However, according to the Sendai Framework Monitoring System as provided by designated national focal points in 2020, Romania has 3,181 local governments but none of them has adopted and implemented local disaster risk reduction strategies in line with national disaster risk reduction strategies.

Table 7.3: Selected series under the global indicator 1.5.1, 2012–2018, number

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>People affected by disaster</td>
<td>4,061</td>
<td>6,433</td>
<td>8,477</td>
<td>2,558</td>
<td>16,313</td>
<td>3,717</td>
<td>137,461</td>
</tr>
<tr>
<td>Deaths due to disaster</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>1,239</td>
</tr>
<tr>
<td>Deaths and missing persons attributed to disasters per 100,000 population</td>
<td>0.02</td>
<td>0.03</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
<td>0.01</td>
<td>6.34</td>
</tr>
<tr>
<td>Deaths and missing persons attributed to disasters</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>1,239</td>
</tr>
<tr>
<td>Directly affected persons attributed to disasters per 100,000 population</td>
<td>20.21</td>
<td>32.13</td>
<td>42.48</td>
<td>12.87</td>
<td>82.55</td>
<td>18.92</td>
<td>703.82</td>
</tr>
<tr>
<td>Injured or ill people attributed to disasters</td>
<td>488</td>
<td>638</td>
<td>885</td>
<td>744</td>
<td>2,263</td>
<td>160</td>
<td>2,458</td>
</tr>
<tr>
<td>People whose damaged dwellings were attributed to disasters</td>
<td>1,863</td>
<td>4,161</td>
<td>5,436</td>
<td>1,065</td>
<td>9,016</td>
<td>2,286</td>
<td>19,027</td>
</tr>
<tr>
<td>People whose destroyed dwellings were attributed to disasters</td>
<td>73</td>
<td>134</td>
<td>127</td>
<td>49</td>
<td>115</td>
<td>46</td>
<td>908</td>
</tr>
<tr>
<td>People whose livelihoods were disrupted or destroyed, attributed to disasters</td>
<td>1,637</td>
<td>1,500</td>
<td>2,029</td>
<td>700</td>
<td>4,919</td>
<td>1,225</td>
<td>115,068</td>
</tr>
</tbody>
</table>


Romania has an ongoing programme for improving and extension of the disaster response capacity of the responsible authorities managed by the National System for Emergency Situations Management. The estimated budget is €650 million to be spent on intervention equipment and logistics and training. In the period 2016–2019, 15 national and international exercises for different disaster types have been held and experience was gained to improve the preparedness.
One of Romania’s intentions on disaster management is to play an active role in international assistance. Amongst implemented sectoral measures are programmes to reduce seismic risk, (e.g. building adaptation, population training), and flood risk (Flood Risk Management Plan 2016–2021). The National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020 addresses the actions that must be performed for mitigation and adaptation of the consequences of climate change under which disaster management.

Regarding the targets 11.b (by 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels) and 13.1 (strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries), the Ministry of Environment, Waters and Forests and the General Inspectorate for Emergency Situations are the designated authorities for the fulfilment of policy objective 2.4 of Decision No. 1313/2013/EU: Promoting climate change adaptation, risk prevention and disaster resilience. The approach in Romania is consistent with the existing climate adaptation strategies and includes a description of key risks, a description of the disaster prevention, preparedness and response measures to address the identified risks, and information on budgetary resources like maintenance costs related to prevention, preparedness and response.

Concerning attaining the target 13.3 (Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning), education of the impact of climate change and the mitigation and adaptation measures is organized on various levels: pre-university education, university and post-university education and lifelong learning programmes. Occupational training and national ecological and environmental contests also contribute to the knowledge and awareness of the population. Information- and media campaigns to inform the general public and special campaigns for targets groups are included as priority actions in the National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020.

In the period 2006–2016, 67,358 people were affected, flood being by far the most frequent disaster type (table 7.4). In this period, 421 people have died due to these disasters, most of them (71 per cent) by extreme temperatures. Direct economic loss in this period due to disasters was more than US$1 billion, almost related to a 2010 flood event.

<table>
<thead>
<tr>
<th>Year/Period</th>
<th>Type</th>
<th>Subtype</th>
<th>Deaths</th>
<th>Persons affected</th>
<th>Total damage (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>37</td>
<td>18 871</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>Flood</td>
<td>Flash flood</td>
<td>14</td>
<td>5712</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>Extreme temperature</td>
<td>Heat wave</td>
<td>26</td>
<td>200</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>Flood</td>
<td>Flash flood</td>
<td>0</td>
<td>500</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>Extreme temperature</td>
<td>Heat wave</td>
<td>30</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>12</td>
<td>3760</td>
<td>0</td>
</tr>
<tr>
<td>2007–2008</td>
<td>Extreme temperature</td>
<td>Cold wave</td>
<td>38</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>Storm</td>
<td>Extra-tropical storm</td>
<td>0</td>
<td>90</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>5</td>
<td>11 000</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>Extreme temperature</td>
<td>Cold wave</td>
<td>43</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>11</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>Extreme temperature</td>
<td>Cold wave</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>Extreme temperature</td>
<td>Cold wave</td>
<td>52</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>26</td>
<td>12 237</td>
<td>1 111 428</td>
</tr>
<tr>
<td>2012</td>
<td>Extreme temperature</td>
<td>Cold wave</td>
<td>86</td>
<td>7 539</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>9</td>
<td>5 400</td>
<td>11</td>
</tr>
<tr>
<td>2014</td>
<td>Extreme temperature</td>
<td>Cold wave</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2014</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>4</td>
<td>525</td>
<td>0</td>
</tr>
<tr>
<td>2015</td>
<td>Flood</td>
<td>Riverine flood</td>
<td>1</td>
<td>1 500</td>
<td>0</td>
</tr>
</tbody>
</table>
Institutional framework

Ministry in charge of environmental matters.

The Ministry of Environment, Waters and Forests is the central public authority responsible for the general coordination of strategic documents and actions related to the mitigation of and adaptation to climate change. It ensures that strategic documents and measures are in line with EU and other governmental policies. The Ministry is the coordinator of the National Commission of Climate Change. The Ministry is responsible for managing the national system of GHG emission inventory and for the preparation and submission of the GHG Emission Inventory to the UNFCCC Secretariat, EC and EEA, in accordance with their requirements.

The Environment Fund Administration manages the Environment Fund to the purpose of supporting and promoting projects and programmes for environmental protection and in the view of meeting the EU objectives in the environment and climate change fields.

NEPA ensures the environmental monitoring. Due to institutional changes occurred in 2012, it is not anymore directly involved into the elaboration of the climate change policies. Since July 2016, NEPA is the competent authority that is responsible for administrating the National Inventory Arrangements and National GHG inventory system.

The National Meteorological Administration is the technical national authority on meteorology. Its main objectives are to provide sound prognosis and weather alerts, prognosis on the atmospheric dispersion of the pollutants in situations like the occurrence of dangerous meteorological phenomena and accidental pollutions, agro-meteorological prognosis to specific users, as well as conducting climate studies and climate monitoring to adequately identify the observed changes and possible scenarios for the climate. It provides specific information for the elaboration and implementation of strategic documents to prevent the impact of dangerous meteorological phenomena on medium- and long-term.

Romanian Waters ensures the administration of the public goods to the purpose of studying, protection, valorisation and sustainable use of the water resources, the management of the national network for hydrological, hydrogeological and quality measurements belonging to the public domain, as well as the management of the infrastructure for the National System of Water Management. The Administration implements the policy on quantitative and qualitative water resources management, to which aim it acts towards the studying of the water resources, conservation, rational use and protection of water resources against the exhaustion and degradation especially by adverse effects of climate change, to the purpose of ensuring their sustainable development and prevention of the destructive effects of waters.

NEG is responsible for specialized inspection and control and can exercise sanctioning, suspending and stopping activities in cases of non-compliance with the conditions of regulatory acts on environmental protection and climate change.

The National Forest Administration is responsible for sustainable forest management with special attention to the role of forest management in climate change mitigation and adaptation. It is involved in climate change related projects like the Drought Risk in the Danube Delta Project and Mitigating vulnerability of water resources under climate change.

Other institutions

The Ministry of European Funds is the central public entity responsible for the coordination of the European funds through eight national and regional programmes with a total amount of €30.84 billion in 2014–2020. The Ministry was responsible for the management of five operational programmes for 2014–2020, including infrastructure, competitiveness, human resources, technical assistance, and support of disadvantaged persons. EU-funded activities related to climate change include promoting sustainable transport, enhancing access to and
use and quality of information, climate change adaptation and risk prevention and stimulation of low carbon economy.

The Ministry of Economy, Energy and Business Environment is responsible for the economy and industrial policies and for energy issues.

The Ministry of Public Finance is one of the main actors regarding the financial instruments related to climate change, such as trading of the ETS certificates, trading of assigned amount units, revenues resulting from trading the GHG emission certificates, economies in the Reserve of the new entries for the Joint Implementation projects.

The Ministry of Transport, Infrastructure and Communication is responsible for all the transportation sectors, except for the urban transportation, which is under the local authorities' competence. It is responsible for the policy concerning the national infrastructure, as well as for the economic policy on transports and climate change.

The Ministry of Public Works, Development and Administration is the central body responsible for climate change related issues in the areas of infrastructure, construction and urban planning. The National Authority for the Regulation of the Community Public Utility Services is subordinated to the Ministry and ensures the regulation and monitoring, at central level, of the activities carried out by the Community Services for Public Utilities. Improving energy efficiency of the buildings and related standards concerning climate change for the public services are among its competences.

The Ministry of Agriculture and Rural Development is the central body responsible for the climate change related issues in the areas of agriculture and rural development.

The Ministry of Foreign Affairs holds a key role in the international climate change negotiations. It is the national coordinator and technical focal point for the Europa 2020 Strategy.

The Ministry of Education and Research plays a role in the education and in research in climate change. Specific projects on ecology and climate change mitigation and adaptation are developed for the curricula of primary and secondary education.

The National Institute for Statistics is the main source of information and data for developing the GHG Inventory.

The National Authority for the Energy Regulation under the Parliament regulates the energy, energy efficiency and renewable energy market. The Authority is responsible to monitor and report on the implementation of the National Action Plan for Energy Efficiency, in accordance with the corresponding EU legislation.

The National Institute of Public Health, subordinated to the Ministry of Health, prepares annual reports on the impacts of climate change on the human health which is later communicated to the Ministry of Health and submitted to the Government.

The National Institute for Hydrology and Waters Management manages floods-related information.

The National Institute for Research and Development is responsible for monitoring and research of the forest fund and for the LULUCF chapter in the GHG Inventory.

The General Inspectorate for Emergency Situations, specialized institution of the Ministry of the Interior, is responsible for the management and prevention of disasters and operates the National Operational Centre. In addition to the headquarters located in Bucharest there are 41 inspectorates for emergency situations at county level and a special intervention unit that has national competence. In the context of climate change and the expected increase of extreme weather events causing disasters, a national population warning system, RO-ALERT, has been implemented. Warning messages can be received on mobile phones. In case of an emergency, the Inspectorate has a coordinating role and works with relevant stakeholders including local and regional authorities, fire brigades, medical emergency services, police and army.

Local government authorities participate in projects that strengthen the process of adaptation to climate change as part of the sustainable development policy. For example, key objectives of the project “A Green Way to
Sustainable Development” carried out by LEPA Sibiu are education and training for local authorities on climate change adaptation, organization of awareness campaigns, establishment of a regional network of county councils and municipalities, meteorological studies to support the implementation of climate change adaptation plans and elaboration of local strategies and action plans for climate change adaptation. In Romania 64 cities have signed up for the 2030 Covenant of Mayors, an EU initiative by the EC targeting local authorities and populations to take the lead in the fight against climate change. Signatories that joined the Covenant between 2008 and 2015 have made the voluntary commitment to go beyond EU’s 2020 targets of 20 per cent CO\textsubscript{2} emission reduction.

**Inter-ministerial coordination**

The National Commission on Climate Change is a main advisory body for inter-ministerial coordination on climate change related issues. GD No. 1026/2014 strengthens and improves the role and functioning of the Commission, by establishing two layers of functioning (technical and political) and clarifying and extending the responsibilities of the Commission. The Commission comprises representatives from line ministries and one NGO with competencies in climate change. Since its reorganization though, the activity of the Commission has been extremely limited to none.

The Recommendation 10.3 made in the second EPR of Romania, asked the Government to improve and reinforce cooperation by: (a) strengthening the role of the National Commission on Climate Change in interministerial cooperation by increasing the frequency and regularity of the gatherings of the commission; (b) strengthening the capability of the secretariat serving the National Commission on Climate Change; and (c) using the Working Group on Adaptation as model for establishing climate change related working groups in other relevant areas such as energy efficiency, transport and waste emissions. While the Commission was strengthened, its activity remains low as at December 2019. No working groups were established, even though in the context of the OPERA-CLIMA project (2013–2016) the Government has delivered rapid assessment reports for priority sectors which contain adaptation measures recommended for implementation in various sectors such as energy, transport, water, agriculture, forestry, urban development. Therefore, it can be concluded that the point (a) of the recommendation was implemented to a limited extent during a limited period, while points (b) and (c) have not been implemented.

**Regulatory, economic and information measures**

**Emissions Trading**

The EU ETS covers all large GHG emitting installations in the industry-, power-, and aviation sectors in the EU, setting a cap on the GHG emissions. The third phase of the EU ETS started in 2013; aircraft operations are since then included.

Romania’s emission reduction target is 34.7 per cent in 2020 and 43.9 per cent in 2030, compared with 2005 levels. In 2018, the Romanian EU ETS emissions were 44.8 per cent lower than in 2005. The change in ETS GHG emissions in Romania in the period 2018–2030 is expected to be 0 per cent if additional measures are applied, with existing measures an increase of 4.6 per cent is projected.

Around 200 installations operate under EU ETS in Romania. Each operator must have a GHG-emissions authorization issued by NEPA and a CO\textsubscript{2} Monitoring and Reporting Plan as an annex to the GHG emissions authorization that is annually validated and approved by the Agency. Allowances are issued or auctioned yearly based on the National Allocation Plan approved by EU. Operators submit an emission report to the Agency every year, to be validated by an accredited body. The Registry of GHG Emissions by the Agency finishes the compliance process by comparing the number of certificates with the quantity of CO\textsubscript{2} emitted.

**Other GHG reduction instruments**

The reduction of GHG emissions from most sectors that are not covered under the EU ETS such as transport, buildings, agriculture and waste, is regulated in the EU Effort Sharing Decision. The EU Effort Sharing Decision for GHG emissions from sectors not included in the EU ETS system became operational in 2013. Romania’s national targets under this mechanism are to avoid an increase of GHG emissions compared to 2005 by more than 19 per cent, and to reduce GHG emissions with 2 per cent in 2030. GHG emissions under this mechanism in
Romania are projected to increase by 2 per cent with existing measures or diminish by 1 per cent with additional measures.

Romania participates in the Joint implementation mechanism of the Kyoto Protocol as a host country and has signed 10 Memoranda of Understanding with annex I countries and with the World Bank (Prototype Carbon Fund) in the first commitment period of the Protocol (2008–2012). Under this mechanism, 18 projects have received a letter of approval and are in different stages of implementation. Some have been finalized, e.g., the Dorobantu Windpark and the N₂O emission reduction project in Nitroporos. In the second commitment period under the Kyoto Protocol (2013–2020), Romania did not renew the existing memoranda and did not sign new ones.

The draft integrated national plan on energy and climate change 2021–2030 proposed a renewable energy sources target for the electricity production of 27.9 per cent in 2030. According to EU and other experts, this target is below to the technically and economically achievable target due to the estimated renewable energy potential; it is expected that it will be increased to 34 per cent in the final plan expected at the end of 2020. In the last version of the Plan, the percentage was 30.7.

**Information**

The National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020 includes targets on education, training and public information. These targets include the implementation of measures to adapt the curriculum in the vocational- and academic environment to climate change, public awareness actions through information, education and communication campaigns on the risks and opportunities from climate change effects, projects in schools, universities, communities and the private sector and training of teachers on the effects from climate change. Monitoring, evaluation and reporting of implemented actions of the plan are essential for the information about effectiveness, so each action in the plan must have its indicator(s). Various projects have been funded by the Operational Programme for Human Resources Development from the European Social Fund and from state budget.

In the framework of the EU Human Capital Operational Programme 2014–2020 mitigation and adaptation to climate change is within one of the three by ESI funded operations. The Environment Fund finances programmes that promote energy efficient and non-pollutant vehicles by granting subsidies, public awareness about GHG emission reduction, increasing the use of renewable energy sources, afforestation of degraded land and the prevention or mitigation of effects caused by extreme meteorological phenomena.

### 7.4 Mitigation and adaptation

#### Mitigation scenarios

In December 2019 the EC presented the EU Green Deal, with the aim to make the EU climate neutral by 2050. The strategy to reach this objective and the update of the EU-NDC are expected at the end of 2020. Romania has already reduced its GHG emissions in 2017 with more than 60 per cent compared with 1990. The EC has recommended Romania to increase its renewable energy target from 27.9 to at least 34 per cent. The improvement of the energy efficiency in Romania in 2015 compared with 2000 is 35 per cent.

The Seventh National Communication describes GHG emission projections (figure 7.3). The GHG emission projections have been drawn up for three scenarios: Business as usual (WOM, excluding all measures after 2005), a scenario containing mitigation policies and programmes (WEM) and a scenario containing additional emission mitigation measures (WAM).
The emission projection horizon is 2020–2035, with 2015 as the reference year. The emission projections are based on assumptions about the macro-economic indicators and have a high uncertainty for 2035 due to uncertainty of the global and national economic developments. Romania achieved its Kyoto Protocol target in 2008–2012 and in all three scenarios the levels of emission projections are expected to stay below Kyoto target level.

In the WOM scenario the GHG emissions rise by 33.5 per cent in 2035 compared with 2015, while in the WEM and WAM scenarios there is little difference, emissions rise only slow and are 26.75 per cent and 27.95 per cent respectively lower than in the WOM scenario. GHG emission projections for 2015–2035 are based on assumptions related to population and economic growth, including interaction between the sectors. In the BAU scenario (WOM) the total GHG emission in 2035 is estimated at 184,000 Gg CO2-eq. while the WEM and WAM scenarios the total GHG emissions are estimated 131,000 and 126,000 Gg CO2-eq. respectively.

**Resources**

The 2015 OPERA-CLIMA project provides estimates on investments that are needed to achieve the proposed objectives to reduce GHG emissions and implement climate change adaptation measures for the period 2015–2050. Total costs are estimated between €30–40 billion. The draft Integrated National Plan on Energy and Climate Change 2021–2030 also gives an estimation of cumulative investments. (€22 billion for the energy sector).

For the period 2014–2020 €7.1 billion was allocated for environmental expenditure in Romania within the (EU) Cohesion Policy, including for the shift to a low carbon economy (€2.9 billion), climate change adaptation and risk prevention and management (€479 million), and Environmental Protection and resource efficiency (€3.7 billion). European Cohesion Fund, European Structural and Investment Fund).

Under the European Agricultural Fund for Rural Development budget for Romania 2014–2020 (€3.25 billion), 11 per cent is dedicated to agri-environment-climate measures.

In 2017 Romania spent almost €1 billion on environmental protection. The Environment Fund grants subsidies in different programmes, e.g., scrappage of old cars, purchase of hybrid or electric cars, clean public transport, afforestation, solar panels and waste management (chapter 3).

According to the Environmental Implementation Review 2019, the total revenues from the auctioning of emission allowances under the EU ETS over the years 2013–2017 were €871 million, from which 55 per cent have been spent on climate and energy purposes. In 2019, 14 GHG reducing projects were proposed for funding by the EC through the EU ETS scheme funding mechanism with a total of €112 million. Most of the projects were on heat- and power production.
The EU Green Deal Investment Plan issued in December 2019 to attain a climate neutral Europe in 2050 will provide extra EU funding of €750 million for Romania.

**Mitigation and adaptation efforts per sector**

The Recommendation 10.4 made in the second EPR of Romania asked the then Ministry of Environment and Forests to develop appropriate projects and programmes to: (a) counter the rising GHG emission trends from the transport and waste sectors; and (b) anticipate and respond to the potential future increases in particular sectoral GHG emissions, e.g., in the livestock farming sector. While data at December 2019 are not available, GHG emissions from road transport have increased from 2013 until 2017 with around 25 per cent. GHG emissions from the waste sector remained relatively constant in the period 2013–2017. In the GHG emission scenarios for 2025 and 2030 with existing and with additional measures the emissions are expected to decrease with around 25 per cent in 2030 compared with 2005. In the livestock farming sector emissions have also remained relatively constant in the period 2013–2017. This recommendation was not fully implemented.

**Energy**

The four petroleum refineries that are currently in operation are already much more energy efficient and are responsible for 10 per cent of the GHG emissions.

**Industry and mining**

In the environmental and GHG reduction permits the implementation of BATs to reduce GHG emissions and increase energy efficiency are not strengthened. Voluntary agreements and economic support for new tools to stimulate reduction of GHG emissions in the industry are not promoted.

**Agriculture and rural development**

At least 30 per cent of Romania’s funds within the National Rural Development Programme were earmarked for climate change mitigation and adaptation measures in agriculture, leading up to an amount of €275 million for 2019. The money has been spent for support of investments in rehabilitation and modernization of the irrigation and drainage infrastructure, appropriate management of agricultural land, (use of chemicals and fertilizers, reduction of the number of animals on pasture lands), use of crops with a high capacity to fix nitrogen in the soil and encouraging ecological agriculture also contributing to adaptation to climate change effects. Future trends suppose an increased production and a reduction of the number of small farms.

**Forests**

Mitigation the consequences of climate change on forests and adaptation of forests to climate change are key parts of sustainable forest management. Wooded areas are expanded to increase carbon sequestration with the help of national and EU Funding. Necessary measures like the increase of the number of foresters, forest management plans, the use of residual biomass from forests and better monitoring of degradation and disturbances in forests are in preparation to implement the measures of the National Forest Strategy 2027.

**Transport**

No measures are taken to prevent further increase of GHG emissions due to the growth of the fleet. Emission performance standards and promotion of the use of biofuels according to the directives are not implemented in the national legislation. Policy documents recommend to introduce instruments such as pricing tools to stimulate more ecological friendly transport, support the purchase of cars with low GHG- and other emissions to air, more and better enforced parking fees, increase of urban transport efficiency, development of urban mobility plans, revitalization and extension of the railroad- and metro network, development of infrastructure for alternative fuels, improved road- and traffic management, pollution tax for older cars, development of infrastructure for cyclists, increase awareness for GHG- and other emissions in the population, revising safety standard, emergency planning in the road and rail sector. However, there are some initiatives to improve air quality, such as RABLA Programme (box 8.1).
Housing, buildings and urban development

No incentives and actions to increase the energy efficiency and reduction of GHG emissions from the housing sector are in place. Such incentives and actions include thermal insulation programmes, revitalization and improvement of district heating, use of modern heat generating systems, issue of energy performance certificates, development of minimum renovation performance standards, support of green mortgages, promotion of smart cities, green cities, planning of climate resilient cities, risk analysis, and emergency response plans to climate change effects. Nevertheless, since 2010, The Programme Casa Verde provides financial assistance for the installation of solar collectors, heat pumps or biomass heating systems in residential and public buildings (box 8.2).

Tourism and leisure

Research programmes have been completed on the impact of climate change on tourism activities in Romania, including specific assessments of the vulnerability and adaptive capacity of tourist resorts. As at December 2010, it has not led to general mitigation and adaptation measures and legislation on tourism and leisure, and climate change.

Health

Measures included in the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2030 and the National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020 are announced for adaptation to extreme weather events that can have direct effects on public health in emergency situations or delayed effects in the long term. Flooding by heavy precipitation, heavy storms, frost, forest fires, extreme droughts and enhanced mortality rates during heat waves are direct threats for which preventive measures must be taken on risks prevention and emergency planning. Developing capacity and training for surveillance and early detection of events with impact on public health on the national level using impact functions for continuous assessment; investments in technology and risk reduction strategies to reduce the vulnerability in critical areas are key actions in the plan.

The Inspectorate of the Ministry of Health produces a yearly report on health effects and risks in relation to environmental factors including a chapter on climate change. Institutions in charge such as the National Meteorological Administration are expected to be enhanced in capacity to obtain the necessary data. The General Inspectorate for Emergency Situations has developed a risk assessment methodology for periodic national risk assessment (RO-Risk). This will be followed by risk management plans at sectoral levels.

7.5 Assessment, conclusions and recommendations

Assessment

Romania ratified the United Nations Framework Convention on Climate Change in 1994, the Kyoto Protocol in 2001 and Paris Agreement in 2017. As an EU Member State, the country is required to achieve the EU targets to reduce the GHG emissions with 20 per cent in 2020 and at least 40 per cent in 2030, compared to 1990. Romania’s GHG Emissions Inventory 1989–2017 and the annual reports of the EEA on emission data show that the EU reduction targets are quite well achievable and can be preserved for Romania, even in the case of the scenario’s with higher economic growth. This is due to the quick and substantial decrease of the GHG emissions in the years 1989–1995 caused by a rapid closure of many unprofitable manufacturing industries after the transition to a market economy.

The EU legislation on climate change has been transposed in Romanian legislation. The National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2030, the National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020, and the draft Integrated National Plan on Energy and Climate Change 2021–2030 are key policy documents on climate change mitigation and adaptation.
Recommendations made in the second EPR of Romania on the adoption of new strategies and action plans (Recommendation 10.1) and the necessary improvements of the National Greenhouse Gas Inventory System (Recommendation 10.2) have been implemented. The Recommendation 10.3 on the role of the National Commission on Climate Change has been followed by GD No. 1026/2014, aimed at enforcing the role and improving the operation of the Commission. However, this has only partially satisfied the recommendation. In the OPERA-CLIMA project (2013–2016) the Government, advised and supported by the World Bank, delivered rapid assessment reports for different sectors (energy, transport, water, agriculture, forestry, urban development) containing adaptation measures recommended for implementation. The Recommendation 10.4 to counter the rising GHG emissions from transport, waste and livestock farming sectors has been partially implemented for the waste and livestock farming but not for the transport sector because of the increase in the number of cars.

Romania has made progress in achieving SDG target 13.2 by the adoption of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions 2016–2030, the National Action Plan for the implementation of the Strategy and other sectoral strategic documents. The adoption of the GD No. 557/2016 on risk type management complemented the policy framework on risk management and contributed to the implementation of the target 1.5 and indicators 1.5.3, 11.b.1, 13.1.2, and 13.1.1. Concerning the indicators 1.5.4, 11.b.2 and 13.1.3, specific roles and responsibilities for disaster risk management are held at county level. However, according to the Sendai Framework Monitoring System, local governments have not adopted and implemented local disaster risk reduction strategies in line with national disaster risk reduction strategies. Concerning the achievement of the SDG targets 11.b and 13.1, the Ministry of Environment, Waters and Forests and the General Inspectorate for Emergency Situations are the designated authorities for the fulfilment of the policy objective 2.4 of Decision No. 1313/2013/EU: Promoting climate change adaptation, risk prevention and disaster resilience that is related to these targets.

Conclusions and Recommendations

Monitoring and reporting

The National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2030 and the National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020 list sectoral and cross-sectoral actions and measures. The Plan states that monitoring, evaluation and reporting of the progress and performance of implemented actions is essential to ensure their effectiveness, efficiency and equity. Each action in the Plan includes indicators to help monitor progress in implementation. As at December 2019, reports on the implementation of the actions had not been published.

Recommendation 7.1:
The Government should:

(a) Set up a monitoring framework for the evaluation and reporting of the state of implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2030, providing indicators that present quantitative estimates of impacts and effects;

(b) Evaluate the indicators used in the National Action Plan for the Implementation of the National Strategy on Climate Change and Economic Growth Based on Low Carbon Emissions for the period 2016–2020, use the lessons learned from the evaluation in setting up a new national action plan for the next implementation period and ensure regular, annual or biannual reporting on the progress of the action plan with substantive information, including qualitative and quantitative data and costs and benefits of measures, and increase the public information and awareness of the results of the actions.

Energy sources mix

The National Energy Strategy 2019–2030, with a perspective of 2050, and the draft Integrated National Plan on Energy and Climate Change 2021–2030 describe operational objectives. These are translated into policies and measures to achieve EU targets (EU ETS and non-ETS). The objectives are described within the expected development of the future energy production structure, security and integrity of the energy supply, resilience against natural disasters and interconnectivity, as well as the replacement of old and obsolete equipment by modern energy efficient and clean installations. The Plan sets the renewable energy production target for 2030 at
30.7 per cent. According to these two documents, the current energy production mix from various sources is expected to be diversified and balanced, which the replacement of current inefficient installations would not alter.

**Recommendation 7.2:**
The Government should:

(a) Consider replacing older coal- and gas-fired power plants by new installations based on renewable energies;
(b) Consider enhancing the share of energy from renewable sources in order to reach at least 34 per cent by 2030;
(c) Improve the energy efficiency targets to a level that is more consistent with the EU level and Romania’s potential.

**Energy efficiency**

The energy efficiency of residential and commercial buildings is very low, due to the lack or insufficient level of thermal insulation in most buildings. In 2017 the Strategy for mobilizing investments in the renovation of residential and commercial buildings existing at national level, both public and private, has ambitious objectives concerning energy efficiency of buildings to meet EU Directives and improve the energy systems of buildings. Improvement of the energy efficiency in the building sector is expected to provide large economic, social and environmental benefits. The Government has established the legal basis for support schemes designed to improve the energy performance of buildings by co-financing.

**Recommendation 7.3:**
The Government should:

(a) Improve the energy efficiency of old district heating systems in apartment buildings by subsidizing technical provisions and rehabilitation of buildings and by stimulating awareness of energy use of the inhabitants by installation of individual meter systems;
(b) Create incentives to stimulate a more economic use of energy sources considering the concerns of poor and vulnerable parts of the population;
(c) Support the enhancement of energy efficiency and address the issue of seismic risk in buildings by considering the introduction of specific incentives and also increasing the use of EU Funds such as the European Regional Development Fund, European Social Fund and the Cohesion Fund;
(d) Develop financing products to support beneficiaries of renovations and the use of renewable energy in buildings;
(e) Support research and development and demonstration projects for new technology and techniques to enhance energy efficiency in buildings.

**Transport**

In the period 2012–2017, GHG emissions from transport have increased around 15 per cent, mainly because of the road transport subsector, which is responsible for 96 per cent of the GHG emissions of the transport sector. Compared with the base year emissions in 1989, the increase of transport GHG emissions in 2017 is over 90 per cent. The car fleet is relatively old and is expected to grow in the future with rising incomes. The infrastructure in urban areas is insufficient to absorb this growth, which leads to congestion, parking problems and severe air pollution. The 2016 General Transport Masterplan includes measures to slow the growth of transport emissions.

**Recommendation 7.4:**
The Government should:

(a) Stimulate the demand for low emission vehicles and the move of transportation to low emission modes;
(b) Encourage municipalities to invest in better public transport with lower GHG emissions, public transport lanes and in more safe walking and biking zones, especially in urban areas;
(c) Encourage municipalities to limit urban driving by applying low emission zones that are forbidden to high emission vehicles;
(d) Encourage municipalities with heavy traffic and high levels of pollution to apply user fees in congested areas;
(e) Prepare for infrastructure that accommodates the use of electric cars;
(f) Consider the possibility of modal shifts from road to rail transport;
(g) Implement emission performances standards and promote the use of biofuels according to the national legislation.

Water and agriculture

Climate change is expected to have a major impact on water resources and management in Romania. An increase in the frequency and magnitude of floods, including flash floods and extreme droughts, especially in the southeast, is predicted. Flood protection infrastructure and the water management organization lack investments to be adequately prepared for these challenges. An increase in extreme droughts caused by climate change has a big influence on the application of irrigation, which has largely declined after the transition to a market economy.

The impact of climate change on agriculture in Romania will differ depending on the geographical location, but the overall effect will be negative as a result of increased flooding, more frequent and longer droughts and increased soil erosion. No mitigation measures are taken to decrease GHG emissions by improving the current low productivity levels. The EU Common Agriculture Policy provides the framework for climate change mitigation and adaptation in EU member States.

Recommendation 7.5:
The Government should:

(a) Invest in the water storage capacity, including dam safety, while minimizing the environmental impacts of its interventions;
(b) Implement measures to increase the efficiency of irrigation in the main agricultural areas (mainly the southeast) by improved reservoir management and transfer between basins;
(c) Investigate the selection of climate resistant crops and the optimization of fertilizer use;
(d) Stimulate minimum tillage and modern manure management in fields in order to minimize GHG emissions;
(e) Improve the awareness of farmers about climate change mitigation and adaptation measures;
(f) Assess and address the impacts of extreme weather events on the industrial and mining sectors, to avoid possible heavy environmental damages.
PART III: MEDIA AND POLLUTION MANAGEMENT
8.1 Air quality

In accordance with data on air quality in Romania during the period 2009–2018, it can be concluded that overall air quality in the country is satisfactory, with a clear descending trend in the concentration of pollutants, although some issues of concern remain. In the period 2009–2018 a number of Romanian cities had concentrations of particulate matter (PM) and nitrogen dioxide (NO\textsubscript{2}) above the annual limit values set by EU and domestic legislation.

NO\textsubscript{2} concentrations were in the last 10 years measured in Romania at 147 stations, although only one third of these stations have available data for the whole period. Only 11 of these stations are classified as ‘traffic stations’, where the highest concentrations of NO\textsubscript{2} are expected in urban areas (figure 8.1). Consequently, exceedances of NO\textsubscript{2} annual limit values are recorded at five traffic stations with complete data: Pitesti, Brașov, Iasi, Ploiesti and Timisoara. Exceedances of limit values were also recorded at 16 stations where NO\textsubscript{2} concentrations were not measured during the whole period 2009–2018 and those are stations in Bucharest (2), Brașov (3), Cluj Napoca (4), Buchin (1), Constanta (2), Craiova (2), Giurgiu (1) and Iasi (1). Again, eight of these stations are classified as traffic stations, which points to strong impact of traffic on air quality in Romania. Exceedances are constant throughout the whole observed period in Iasi, Brașov and Bucharest.

Figure 8.1: Average annual NO\textsubscript{2} concentrations recorded at selected traffic stations, 2009–2018, µ/m\textsuperscript{3}


No exceedances of EU sulphur dioxide (SO\textsubscript{2}) standards were reported in Romania in 2009–2018. Annual average values are generally low, compared with EU daily limit value of 125 µg/m\textsuperscript{3}. Certain stations in Romania were recorded with high annual concentrations, which show that there were exceedances of daily limit values too. For example, mean annual concentration at one station in Constanta was 131 µg/m\textsuperscript{3} in 2015, while one station in Giurgiu recorded the annual mean value of 104 µg/m\textsuperscript{3} in 2014. The 2019 report on air quality in Europe of European Environment Agency (EEA) states that in 2017, 43 per cent of all the stations reporting SO\textsubscript{2} levels, located in 28 reporting countries measured SO\textsubscript{2} concentrations above the WHO air quality guidance daily value of 20 µg/m\textsuperscript{3}.
PM$_{10}$ concentrations in the period 2009–2018 were measured at 125 automatic stations, while filters from 129 stations are analysed by gravimetric method. However, data for the whole observed period are available for 41 stations. The situation is different when PM$_{2.5}$ are concerned. There are three automatic stations with PM$_{2.5}$ analysers while gravimetric analysis is done only for 30 stations. Data for the whole period 2009–2018 are available for seven stations.

Exceedances of PM$_{10}$ annual limit values were more frequent in the period 2009–2013 and were observed in Bistrița, Brașov, Bucharest, Craiova, Giurgiu, Iasov Radu Negru, Rovinari, Tarceni and Timisoara. According to the available data, there were no exceedances of PM$_{10}$ limit values after 2013, except in Iasi during 2017 and 2018. However, the EC referred Romania to the Court of Justice of the European Union in 2018, “since the daily limit values for concentrations of PM$_{10}$ have been systematically and constantly exceeded in Bucharest since 2007, and that despite those exceedances, Romania has not established plans for that zone which comply with relevant EU legislation”\textsuperscript{122}. Another legal proceeding takes place due to gaps in monitoring air quality, including the fact that Romania did not submit hourly values for concentrations of some pollutants to the EEA, which in turn does not enable proper analysis of air pollution (e.g. although average annual values are compliant with set limit values, population exposure might be above daily limit values in certain periods of the year). PM$_{10}$ concentrations in Bucharest/Ilfov County, with a few exceptions, generally fluctuate between the annual limit value set by EU and WHO Air Quality Guidance, which might be soon accepted as the EU standard under the European Green Deal (figure 8.2). In this context, stricter air quality standards for PM$_{10}$ will pose a challenge for Romania.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure8.2.png}
\caption{Average annual PM$_{10}$ concentrations recorded at air quality stations in Bucharest /Ilfov County, 2009–2018, µg/m$^3$}
\end{figure}


Data on concentrations of PM$_{2.5}$ show that exceedances of the EU annual limit value of 25 µg/m$^3$ were recorded at certain stations all over the country, including recent exceedances in Iasi (2017, 2018), Brașov and Miercurea Ciuc (2017). The stricter WHO Air Quality Guidance (10 µg/m$^3$) is exceeded at all stations which monitor this pollutant.

Data on heavy metals and benzo(a)pyrene in particulate matter are not with sufficient time coverage (up to 40 per cent) in order to be analysed. The reason behind this fact is that, only one accredited laboratory for air quality produces these data. Additional 12 laboratories located in some of the counties, working under coordination of

\footnote{\textsuperscript{122} Case C-638/18, Action brought on 12 October 2018 — EC vs Romania \url{http://curia.europa.eu/juris/document/document.jsf?text=&docid=208627&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=1113736}}
LEPAs are not accredited, but still produce data on particulate matter. Hence, those data are of a questionable reliability.

Ground-level ozone (O\textsubscript{3}) is measured at 105 stations throughout the country. Although the measurements are consistent at all stations, there is a complete dataset for period 2009–2018 for 78 stations. Out of these stations, six are rural background stations where levels of O\textsubscript{3} are of particular importance, especially for monitoring the impact of ozone levels on ecosystems. O\textsubscript{3} is also monitored at three EMEP stations. Furthermore, within the International Co-Operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests), measurements of O\textsubscript{3} are carried out at four forest monitoring sites. The highest concentrations of O\textsubscript{3} were recorded in Sanpetru, Braşov County, while the lowest were in Cluj Napoca, Cluj County. EEA estimates that in 2017, 35.2 per cent of Romanian population was exposed to concentrations of O\textsubscript{3} which is higher than EU standards.

In 2017 one industrial station in Romania (Brazi, Prahova County), measured high concentrations (6.12 µg/m\textsuperscript{3}) of benzene. In 2018 it was lower (4.47 µg/m\textsuperscript{3}), below the annual limit value of 5 µg/m\textsuperscript{3}. Similar concentrations of benzene are recorded in 2018 in two other stations in Ploiesti (4.63 µg/m\textsuperscript{3}) and Blejoi (4.85 µg/m\textsuperscript{3}) located in Prahova County.

### 8.2 Trends in emission levels

Romania is Party to the Convention on Long-Range Transboundary Air Pollution (Air Convention) and regularly reports on its emissions. The Romania’s IIR 2020 contains data for the period 1990–2018. In this analysis, focus was given to data available for the last 10 years (2008–2018).

Emissions of air pollutants were quite stable in the period 2008–2017, showing slight descending trend, except for SO\textsubscript{x} where significant reduction is obvious and is accounted for some 84 per cent, falling from 523 kt in 2008 to only 82.5 kt in 2018 (figure 8.3). IIR assigns this reduction to the use of low-sulphur content fuels and installation of desulphurization equipment in LCPs in order to achieve compliance with the EU legislation. Although not that visible in Figure 8.3, NO\textsubscript{x} emissions during the last 10 years decreased by 25 per cent, from 301 kt in 2008 to 225 kt in 2018. This decrease in NO\textsubscript{x} emissions is explained by use of NO\textsubscript{x} catalysts by road vehicles and low-NO\textsubscript{x} burners used in industrial and power plants.

![Figure 8.3: Emission trends for the main air pollutants, 2008–2018, kt](source: IIR 2020)

Emissions of particulates have also decreased. Both emissions of PM\textsubscript{10} and PM\textsubscript{2.5} in 2018 decreased by about 14 per cent and 17 per cent, respectively, compared with 2008. Emissions of ammonia (NH\textsubscript{3}) have been reduced by about 14 per cent from 204 kt in 2008 to 175 kt in 2018. Also, emissions of non-methane volatile organic compounds (NMVOC) were reduced by about 25 per cent. Despite the achieved reductions, some of them are not
enough to satisfy obligations stemming from the Gothenburg Protocol to the Air Convention and the Directive 2016/2284 on the reduction of national emissions of certain atmospheric pollutants. While Romania achieved the ceilings projected for 2010, there is already an incompliant trajectory for achievement of the ceilings set for 2020. Romania committed to reduce by 2020 the 2005 PM$_{2.5}$ emissions level by 28 per cent, which will be about 76 kt.

Emissions of all toxic metals were decreased during the period 2008–2018 (Figure 8.4). Achieved reductions were 29 per cent of Pb, 22 per cent of Cd, 52 per cent of Hg, 38 per cent of As and 45 per cent of Ni. Emissions decreased due to changes in sectors of iron and steel production and combustion in manufacturing industries and electricity production.

![Figure 8.4: Emission trends of Pb, Cd, Hg, As and Ni, 2008–2018, t](source: IIR 2020)

Similar to all other emissions, emissions of persistent organic pollutants (POPs) were also reduced in 2008–2018. Emissions of polychlorinated dibenzo-p-dioxins (PCDD) and dibenzofurans (PCDF) dropped from 190.12 expressed in grams, using international toxic equivalency (I-TEQ/g) to 153, total emission of polycyclic aromatic hydrocarbons (PAH) was reduced by 18.5 per cent, from 71.5 t in 2008 to 58.3 t in 2018, while emissions of PCBs and hexachlorobenzene (HCB) were decreased by 29.6 per cent and 34.7 per cent respectively.

Romania submitted the Report on Inventory of Greenhouse Gases (GHG) to EU and UNFCCC in May 2019, covering the period 1989–2017. The report contains data on calculations of emissions of the indirect GHGs: NOx, NMVOC, CO and SO$_2$. Romania reported significant differences in calculation of emissions of CO in the GHG Inventory and IIR 2019 for certain sectors (100 per cent difference in the field of burning of agricultural residues, 99 per cent difference in non-energy products from fuels and solvent use). There are also differences related to 2017 emissions of VOC and NOx in the two inventories.

The total GHG emissions in 2017, excluding removals by sinks, amounted to 113,795.945 kt of CO$_2$-eq. Romania, as an EU Member State, has a common GHG emission reduction target with other Member States, defined as 40 per cent of reduction on EU level by 2030 compared to 1990. Within the EU, achievement of this target is shared and should be achieved through the Integrated National Plan on Energy and Climate Change 2021–2030. Assessing the Romania's draft Plan, EC stated that Romania could meet its GHG emission target in 2030 of -2 per cent compared to 2005 for sectors not covered by the EU Emissions Trading System, if it implements policies and measures in line with the projections provided, notably in the transport and agriculture sectors. It also notes that the draft plan does not describe how Romania intends to comply with the no-debit commitment in the Land Use, Land Use Change and Forestry sector, which means that emissions are not higher than removals by sinks. It urges Romania to increase its energy efficiency and renewable energy targets, but also asks Romania to include in the final plan an analysis of the interactions with air quality and air emissions while presenting the impacts of policies and measures on air quality.
The consumption of ozone depleting substances (ODS) in Romania is governed by the EU legislation. Within EU, the trade and use of ODS is regulated by the Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer (ODS Regulation). This regulation stipulates that each company producing ODS, importing them into and/or exporting them out of EU, as well as feedstock users, process agent users and destruction facilities, must report their activities concerning ODS on an annual basis. Since 2012, reporting on ODS has been performed via an online EU platform, which ensures that reporting by companies is documented transparently, while providing the required level of security and confidentiality of the reported data. Data reported under the ODS Regulation is protected by strict confidentiality provisions, which includes the aggregation of data by substance groups and by companies. EEA produces an annual report at the level of EU without mentioning contributions by Member State separately. In the 2019 Report on Ozone Depleting Substances, EEA states that EU has already achieved its goals on the phase-out of ODS substances under the Montreal Protocol. In particular, the report shows that in 2018, the consumption of ODS (an aggregated parameter that integrates imports, exports, production and destruction of ODS, except those for feedstock use) in the EU was negative (-1,505 tons), which means that more ODS were destroyed or exported than produced or imported.

8.3 Performance and gaps in air monitoring networks

Air quality monitoring network consists of 149 stations spread throughout Romanian territory, which is for the purpose of air quality assessment divided in 54 units – 41 air quality zones matching with administrative borders of counties, and 13 agglomerations representing major cities/municipalities. It creates a complex structure which is very demanding in terms of minimum required number of stations and parameters to be monitored. In July 2019, the EC sent an additional letter of formal notice to Romania urging its authorities to address a systemic failure to monitor air pollution as required by EU legislation on ambient air quality, although, as stated in the press release issued on 25th of July 2019, “Romania has been carrying out an overhaul of its air quality monitoring network, many gaps remain concerning the appropriate number and type of air quality sampling points. These shortcomings amount to a systemic failure to comply with obligations to monitor air pollution.” The Air Quality Directive requires Member States to monitor concentrations of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter (PM10 and PM2.5), lead, benzene and carbon monoxide in all their zones and agglomerations, taking into account the rules related to the minimum number of stations which is determined on the basis of population and concentration of pollutants. In cases where concentration of pollutants is below the lower assessment threshold (usually 40–50 per cent of the limit value) continuous monitoring is not required.

The national air quality monitoring network was established in the period from 2004 to 2011 when a majority of stations were installed. In the period after 2012, seven stations were added, five in 2016 and two in 2017, the last one in Moldova Noua measuring only PM10, although classified as ‘traffic’ station, which should at least monitor NO2 in order to assess traffic impact. Other 30 stations within the network are classified as ‘traffic’ stations and monitor appropriate pollutants.

Unofficially, only 7 out of 149 background stations are rural background stations, hence the network is concentrated in urban areas. Moreover, there are three air quality monitoring stations for assessment of trans-boundary transport of air pollution within the co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe (EMEP) in Romania, but the 2018 EMEP Status Report states that Romania stopped reporting to EMEP since 2010. EMEP stations are usually rural background stations, located far from the impact of domestic pollution sources. The number of rural background stations within the network is insufficient to assess impact of air pollution on ecosystems and concentrations of O3, which are the most indicative in rural background stations.

Interestingly, 58 stations within the network are classified as ‘industrial’. However, those stations are usually not in the immediate proximity of industrial plants and not run by an industry, since large installations are not legally obliged to monitor air quality. Some of those stations keep the title ‘industrial’ even though the industry nearby stopped working years ago. An ‘industrial’ station aimed at monitoring the impact of a single industrial plant, industrial complex or industrial zone should be positioned downwind in the immediate proximity of that pollution source in the location where other sources of pollution (e.g. traffic, domestic heating) have negligible impact. Usually, those stations are run by industry itself, in addition to monitoring emissions, as a part of self-monitoring activities.
Most of the stations within the Romanian air quality monitoring network measure SO$_2$, NO$_2$, CO and O$_3$. PM$_{10}$ is also monitored at almost all stations, though techniques are different - some stations have automatic measurement while others make an analysis of PM applying gravimetric method. Twenty per cent of the stations monitor PM$_{2.5}$, prevalently with gravimetric method. Some 50 per cent of stations have BTX$^{123}$ analysers. The analysis of contents of heavy metals and PAH in PM is performed only in the central air quality laboratory in Bucharest, which is the only accredited laboratory for air quality analysis. For 2018, Romania reported to EEA data on heavy metals for 31 stations, although for 30 per cent of the stations with insufficient data coverage. Data on benzo(a)pyrene in PM are reported for five stations with the coverage of data in the range of 24–40 per cent.

In the period 2009–2018 the state air quality monitoring network provided the most consistent measurements of O$_3$ and SO$_2$. O$_3$ was monitored at 105 stations and complete set of data for the whole period 2009–2018 is available for 78 stations. SO$_2$ was measured at 143 stations but the complete data set is available for 70 stations while NO$_2$ was measured in 147 stations with more frequent measurement gaps, so complete set of data is available for 44 stations. PM$_{10}$ concentrations in the period 2009–2018 were monitored both at automatic stations (125) and by gravimetric method, but data are complete for 41 stations. PM$_{2.5}$ were automatically monitored at 3 stations while gravimetric analysis was performed for 30, however complete data set for the period 2009–2018 is available for seven stations.

It gives the impression that robustness of the network does not contribute to the quality and quantity of data suitable for long-term trends analysis. Frequent gaps in continuous monitoring point to the problems in the functioning of the network due to poor maintenance, causing insufficient data capture required for meeting data quality objectives for fixed measurement, as required by Air Quality Directive (90 per cent of data capture). Data quality is hindered not only by the insufficient time coverage, but also by the fact that local laboratories in charge of monitoring, analysis and calibration of instruments are not accredited as required by EU standards. The EC Environmental Implementation Review 2019 for Romania states that “serious and structural shortcomings have been identified in the air quality data measured by the Romanian monitoring network and reported to the EC. In fact, the situation could be much worse than actually reported.”

8.4 Pressures on air quality

Agriculture

Agricultural activities in Romania are responsible for 8.8 per cent of NOx emissions stemming from application of inorganic fertilisers and animal manure. In addition, off-road vehicles and other agricultural machinery caused another 4 per cent of NOx emissions. Moreover, the main part of the NH$_3$ emissions (87.81 per cent) is related to the agricultural sector, while the contribution of NMVOC share from agriculture accounts for 15 per cent of the national total. Field burning of agricultural residues contribute to emissions of NOx, NMVOC, SOx, NH$_3$, particulate matter, black carbon, CO, heavy metals and PAHs. Emissions from this source account for 9.91 per cent of PAH emissions but contribute with less than 1 per cent of total national emissions of other pollutants in 2017.

Energy

Romanian energy sector is characterized by well-balanced diversity of energy sources (figure 7.6). The coal powered plants are about 40 years old. As at December 2019, 28 plants are operating of which 10 are functioning with coal, having an installed gross capacity of 5,915 MW. Compliance with emission limit values established by the Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants and later on by the Industrial Emissions Directive is still an issue. Wind energy potential is estimated to 23 TWh/year and solar energy in some regions (Bucharest and Dobrogea) ranges from 1,500–1,650 kWh/m$^2$, but so far only 3 per cent of primary electricity production comes from these two sources and use of wind power is limited to 7 GWh/year.

The 2020 IIR states that the energy sector represents the main source of emissions for most of pollutants. According to the inventory compiling methodology, energy sector includes fuel combustion in energy industry and in manufacturing industry, transport, small combustion, including off-road mobile machinery, as well as

$^{123}$ BTX - a mixture of benzene, toluene and xylenes
fugitive emissions from fuels. Looking at the sub-sectors, public electricity and heat production is contributing to
the 16.52 per cent of NOx emissions, 60.93 per cent of SOx emissions and only 2.95 per cent of PM10 emissions.

Industry and mining

In 2018 manufacturing industries accounted for approximately 35 per cent of the gross domestic product and 29
per cent of the work force in Romania. According to the draft mining strategy for the period 2017–2035 primary
mineral resources are coal (more than 3.8 billion tons), salt (4.4 billion tons), gold and silver (760 tons) and
cupferiferous ore (443 million tons). There are also reserves of natural gas and crude oil, making Romania an oil
producer, but the level of production is not enough to make the country self-sufficient. Since year 2000 more than
200 mining sites in the country were closed since their operations became unprofitable.

The 2020 IIR classifies the sector of industrial processes and product use as a key category for emissions of heavy
metals (Pb, Cd, Hg, As, Cr, Ni, Zn), NMVOC and POPs. It provides information on the contribution of some
industrial activities to pollutant emissions in percentage in 2018:

- Stationary combustion in manufacturing industries and construction (NOx 4.11, SOx 10.13, Hg 5.83)
- Stationary combustion in manufacturing industries and construction (Iron and Still) (NOx 2.51, SOx 21.97, Pb 6.75, Hg
  12.92, PCBs 17.35)
- Mobile combustion in manufacturing industries and construction (NOx 4.38)
- Iron and Steel Production (Pb 61.54, Cd 14.49, Hg 18.01, As 23.28, Ni 18.65, Cr 43.55, Zn 12.87, PCDD/F
  22.07, PAHs 11.21, PCBs 70.80)
- Chemical industry (NMVOC)
- Food and beverages industry (NMVOC 2.94)
- Fugitive emissions from solid fuels (NMVOC 2.66)

Among various industrial activities, including the combustion in industry, iron and steel industry is the main
contributor to emissions.

Transport

Generally, transport sector is known for its negative impact on air quality, especially in populated urban areas
with high traffic intensity. Romania is no exception, and it is obvious from data on air quality, e.g. concentrations
of nitrogen oxide recorded at traffic air quality monitoring stations in Romanian cities. Data on air emissions
confirm this negative impact. Road transport alone is generating about 38.9 per cent of total NOx emissions in
the country (table 8.1).

Table 8.1: Emissions of air pollutants from road transport sector, 2018, per cent

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
<th>NMVOC</th>
<th>Cu</th>
<th>Zn</th>
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</thead>
<tbody>
<tr>
<td>Heavy duty vehicles and buses</td>
<td>21.46</td>
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<td></td>
<td></td>
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<tr>
<td>Light duty vehicles</td>
<td>5.42</td>
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<tr>
<td>Passenger cars</td>
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<td>Gasoline evaporation</td>
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<td></td>
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<tr>
<td>Automobile tyre and brake wear</td>
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<td>84.74</td>
<td>6.86</td>
</tr>
</tbody>
</table>

Source: 2020 IIR.

Housing

Residential sector contributes to air pollution mainly through district and domestic heating. In December 2015,
the then Ministry of Regional Development and Public Administration and the then Ministry of Energy prepared
the Report on the assessment of the national potential to implement high-efficiency cogeneration and efficient
district heating and cooling. According to this report, approximately 22 per cent of all cities and towns in Romania
(320 cities and towns) use a district heating system. Taking into account the total number of cities, towns,
municipalities and villages (2,861 municipalities and 12,957 villages), only 0.43 per cent of them have an
operational district heating service. The district heating system is under the management, coordination and
responsibility of operators delegated by local public administration authorities. It is directly monitored and
controlled by the National Regulatory Authority for Municipal Services. The number of administrative units connected to district heating system decreased by approximately 78 per cent during the period 1989–2014, dropping from 315 to 70, hence the population using district heating services has reduced from some 8.4 million in 1992 to 3.8 million in 2014. After 2014 the number of users kept dropping, in 2015 there were only 62 local systems operating under the district heating system, but data on the period after 2015 are not available. In many places, the district heating network was completely removed, while in other places consumers just decided to disconnect from the network due to poor quality of the service. Large portion of the population without access to district heating, especially in rural areas, are using firewood for domestic heating. In addition, energy consumption is high due to low energy efficiency of buildings.

According to the 2020 IIR, residential stationary combustion is one of the key category emission sources for all major pollutants, with dominant ratio of national emissions of particulate matters, carbon monoxide, cadmium, zinc, polycyclic aromatic hydrocarbons, dioxins and furans (table 8.2).

<table>
<thead>
<tr>
<th>NOx</th>
<th>VOC</th>
<th>PM10</th>
<th>PM2.5</th>
<th>CO</th>
<th>Pb</th>
<th>Hg</th>
<th>Cd</th>
<th>Cr</th>
<th>Zn</th>
<th>PCDD/F</th>
<th>PAH</th>
<th>HCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.95</td>
<td>30.84</td>
<td>63.31</td>
<td>81.55</td>
<td>65.08</td>
<td>9.02</td>
<td>6.73</td>
<td>55.60</td>
<td>24.47</td>
<td>60.20</td>
<td>64.46</td>
<td>75.54</td>
<td>29.17</td>
</tr>
</tbody>
</table>

Source: 2020 IIR.

8.5 Reducing the health impact of air pollution

Population exposure to high concentrations of air pollutants results in serious impacts on human health. In Romania, concentrations of key air pollutants considered in estimation of health risks (PM, NO2, O3) are in certain areas a matter of concern. If compared with WHO guidance values, which might, under the European Green Deal become binding for EU member states in the near future, concentrations of PM, especially PM2.5, are exceeded all over the country. In this context, the SDS 2030 sets two targets for 2030 as:

- Reducing the impact of atmospheric pollution on human health and the environment through a special focus on air quality;
- Reducing substantially the number of deaths and diseases caused by dangerous chemical products, pollution and the contamination of the air, water and soil.

These targets are directly linked with SDG target 3.9 (By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination), and SDG target 11.6 (By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management). Likewise, the other targets listed in the SDS 2030, these are also lacking precise, measurable values as well as methods to achieve them, which should be the subject of the Action Plan for implementation of the SDS 2030.

In SDS 2030 both targets are elaborated under the Goal 11, underlining the exposure of urban population to air pollution, while it is necessary, leaving no one behind, to promote well-being for all at all ages, taking care of air pollution in rural areas as well, and paying special attention to vulnerable groups of population through appropriate synergy of environmental and health policies.

Indicators defined for monitoring of achievement of these two targets are urban population exposure to air pollution measured through annual mean levels of particulate matter (PM2.5 and PM10) in cities (target 11.6) and mortality rate attributed to household and ambient air pollution (target 3.9), which is estimated on the basis of general population exposure to air pollution.

The 2018 Voluntary National Review provides Eurostat statistics on urban population exposure to air pollution by PM2.5, but only by 2014, when Romania had a decreasing trend of exposure. Figure 8.5 shows an increasing trend of exposure in the period 2014–2017. This indicator measures the population weighted annual mean concentration of particulate matter at urban background stations.
According to the Romania’s air quality country profile prepared by EEA, the percentage of the population exposed to concentrations above EU standards set for PM$_{10}$ in 2017 decreased to 21.4 per cent compared to 54.3 per cent estimated in 2015. The percentage of the population exposed to higher levels of PM$_{2.5}$ in 2017 was 35.5 per cent. This percentage doubles when more stringent WHO guidance values are applied. According to the latest data compiled by EEA, in 2017, 35.2 per cent of the population was exposed to concentrations of O$_3$ above limit values set on the EU level, while exposure to higher concentrations of NO$_2$ is less and applies to only 1.1 per cent of population.

**Figure 8.5: Population exposed to concentrations of PM$_{10}$ above EU standards, 2009–2017, percentage**

[Graph showing population exposure to PM$_{10}$]

Source: Eurostat, Sustainable Development Indicators, 2019.

On the basis of the exposure data, EEA calculated impacts on human health which accounts 23,400 premature deaths due to exposure to high concentrations to PM$_{2.5}$, 2,600 of premature deaths due to exposure to NO$_2$ and 490 of premature deaths due to exposure to O$_3$ concentrations above set EU standards, as presented in the report on air quality in Europe 2019. Global statistics done by WHO are a bit different since WHO was considering data on air quality for a different timespan (2012). WHO estimates a total of 14,497 premature deaths or 73 per 100,000 inhabitants because of exposure to bad air quality and total 314,939 years of life lost or 1,579 per 100,000 inhabitants.

The SDS 2030 gives an overview of measures implemented so far to reduce air pollution in urban areas. It highlights the rehabilitation of urban heating systems and refers to reduction of emissions of SO$_2$ and NOx from LCPs, which are not truly relevant to monitor achievement of the above-mentioned targets. Dust emissions from LCPs decreased from 38,600 tons in 2007 to 5,300 tons in 2015. Total national emissions of PM$_{2.5}$ were reduced for some 17 per cent in the period 2008–2018 (figure 8.3). However, the population weighted annual mean concentration of PM measured at urban background stations, which is globally established indicator to monitor achievement of targets 3.9 and 11.6, increased for almost 7 per cent in the period 2009–2017 (figure 8.5). Not enough measures are taken in order to reduce exposure of population to air pollution in order to reduce its impact on human health.

SDS 2030 also promotes programmes financed by the Environment Fund Administration aimed at car fleet renewal and e-mobility (box 8.1).

**Box 8.1: Renewing Romanian vehicle fleet**

Starting as an ordinary car scrappage programme back in 2005, the RABLA Programme continued and evolved by 2019. Free scrapping bonus given to vehicle owners who opt not to register an old car (firstly, it amounted 3,000 lei, then 3,800 lei).

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125 Ambient air pollution: A global assessment of exposure and burden of disease, WHO 2016 https://apps.who.int/iris/bitstream/handle/10665/250141/9789241511353-eng.pdf?sequence=1
Part III: Media and pollution management

lei since 2009 and 6,500 lei since 2013) can be used when buying new eco-friendly vehicle. The second step of the Programme, “RABLA Plus” offered to Romanian citizens a subsidy for buying low-CO2 emission vehicle. Subsidy amounts some €4,200 for hybrid plug-in and around €9,500 for an electric car.

The two programmes, which aim to stimulate the renewal of the car fleet, can be cumulated. This means that one can benefit both from the voucher for the purchase of a 100 per cent electric or hybrid car as well as from the bonus granted though the RABLA Programme if cancels the registration of a car older than eight years. According to the statistics of the Romanian Association of Automobile Manufacturers and Importers, electric and hybrid cars are on the rise: in the first five months of 2019, sales of electric and hybrid vehicles raised by 70 per cent.

8.6 Legal, policy and institutional framework

Legal framework

The main legal act dealing with air protection is the Law No. 104/2011 on ambient air quality, with a package of a secondary legislation. The Law establishes the National System of Integrated Air Quality Assessment and Management, consisting of the air quality monitoring network and the national inventory of emissions of air pollutants. The Law lists central authorities (ministries) with responsibilities related to functioning of the National System in the following sectors: environment protection, forestry, health, transport, industry, trade, agriculture, spatial planning, public administration, public order and national security. It also assigns responsibilities for air quality assessment and management both horizontally and vertically, providing a very comprehensive and detailed scope of competences of the various actors both on national and local level. Public administrative bodies subordinated, coordinated or otherwise functioning under the authorities of listed ministries are also included with their respective competences.

The Law transposes the Air Quality Directive but does not use opportunities given by that Directive for establishing different air quality monitoring regimes using indicative measurements wherever possible, which would greatly contribute to rationalization of air quality monitoring network.

Since 2012 there were several interventions in the legal framework on air quality. In 2015 the Government adopted GD No. 257/2015 approving the Methodology for the development of air quality plans, short-term action plans and air quality management plans and GD No. 336/2015 for the amendment of annexes No. 4 and 5 of the Law No. 104/2011 on ambient air quality transposing the Directive (EU) 2015/1480 amending several annexes to Directive 2004/107/EC and Air Quality Directive, laying down the rules concerning reference methods, data validation and location of sampling points for the assessment of ambient air quality. Additional amendments in this direction were introduced in 2016 by the GD No. 806/2016 on amendment of annexes No. 4, 5, 6 and 7 of the Law No. 104/2011 on ambient air quality.

During 2015 the list of air quality zones and agglomerations given in the Annex 2 of the Law on ambient air quality was amended by the MO No. 1206/2015 of the Minister of Environment, Waters and Forests. In 2016 this list was amended again by the MO No. 36/2016 of the Minister of Environment, Waters and Forests. Finally, the list of zones and agglomerations was revised again in 2018 by the MO No. 98/2018 of the Ministry of Environment. These amendments of the list of zones and agglomerations were related to their assessment and management regimes. Their impact on air quality assessment is not known since fixed measurements were continued for zones classified in regime ‘C’, which means that concentrations of certain pollutants were below the lower assessment threshold, in which case the continuous measurement on fixed automatic stations is not mandatory. The latest amendment of the list of zones and agglomerations (MO No. 598/2018 of the Ministry of Environment) was directed to air quality management, requiring development of air quality maintenance plans in all zones and agglomerations and air quality improvement plans in zones and agglomerations where there were recorded concentrations of pollutants above set air quality standards.

Policy framework

Romania does not have an air quality strategic document at national level. Policy framework in this area is based on local air quality plans. In line with MO No. 598/2018 of the Ministry of Environment, all 54 air quality zones and agglomerations in Romania should have air quality plans for maintenance of the air quality, while 14 zones
and agglomerations where there were exceedances of limit values of certain air pollutants should also have plans for improvement of air quality regarding concentrations of those pollutants.

According to the Law on ambient air quality, county councils and the General Council of the Municipality of Bucharest (which has the same status as counties) are in charge to develop air quality plans, and they adopt it on the proposal of the president of the county council only upon endorsement given by the territorial public authority for environment protection. County councils also monitor the implementation and submit reports on air quality plan to the territorial public authority for environment protection. Additionally to county's air quality plans which supposed to cover the whole territory of Romania, mayors are responsible for development of air quality plans in their municipalities/agglomerations if there are exceedances of limit values of concentrations of air pollutants, otherwise they participate in elaboration of air quality plans for maintenance of air quality developed at the level of the county. Municipal air quality plans are submitted for approval to the local council after prior approval of the county's LEPA. Reports on implementation of municipal air quality plans are submitted to LEPIAs. GD No. 257/2015 regarding the approval of the methodology for the elaboration of the air quality plans, the short-term action plans and the plans for maintaining the air quality gives the opportunity to municipalities and counties to adopt joint plans if it is necessary, but it requires involvement of additional supervisory body (prefect) and additional administrative procedure.

If properly implemented, it means that air quality management is based on more than 54 different documents produced by different local authorities, without any coordination mechanism. The system of air quality management is complicated with demanding administrative procedure for development and adoption of air quality plans which does not function very well, having in mind that so far air quality improvement plans were developed for seven municipalities and maintenance plans for 14 counties, but not all of them have been approved and adopted. In December 2019, only three air quality plans were approved by the Air Quality Assessment Centre of NEPA and adopted by the city halls of Bucharest, Brașov and Iași. There are no available reports on implementation of adopted plans. For example, the air quality plans for Bucharest and Brașov were adopted in mid-2018. Both plans are focused on measures related to sustainable transport and contain measures related to improvement of district heating networks. Moreover, non-compliance with EU legislation in this regard is already a subject of the procedure in front of the Court of Justice of the European Union on the air quality plan of Bucharest.

In line with obligations stemming from EU legislation as required by the Directive 2016/2284, Romania had to develop the National Air Pollution Control Programme by April 2019, in order to reduce national emissions of SO₂, NOₓ, VOC, NH₃ and PM and implement Gothenburg Protocol to the Air Convention. In December 2019 drafting of this programme had not started. In 2017 the National Transition Plan for large combustion plans was revised (MO No. 1063/2017 of the Ministry of Environment) in order to postpone the deadline for compliance with emission limit values set for these installations by the recent BATs Conclusions for LCPs postponing achievement of emission limit values for 32 LCP installations to 30 June 2020. The revised plan does not contain an explanation on planned and ongoing measures for achievement of emission limit values by these plants.

Institutional framework

Ministry of Environment, Waters and Forests

The Ministry of Environment, Waters and Forests is the main regulatory body which controls and coordinates air quality assessment and management, ensuring uniform implementation of the air-protection-related legislation throughout the country. Apart from its main functions related to legislative and strategic planning tasks, it is also in charge of many technical issues, such as the management of the national air quality network, approval of the national emission inventory prior to its submission to relevant the Air Convention and EU bodies, approval of the annual reports on air quality, air quality monitoring methods, equipment, networks and laboratories, QA/QC procedures.

The Ministry of Environment, Waters and Forests in fact cannot exercise its competences over strategic planning on air quality management, since no air protection policy is in place on national level except for the National Transition Plan for large combustion plans which expires in June 2020. As December 2019, the Ministry of

126 QA/QC – quality assurance/quality control
Environment, Waters and Forests has not established a mechanism to ensure coherence and coordination of local air quality plans, which is necessary, considering their number. Therefore, it is difficult to assess if the Ministry has the necessary competence for its various technical tasks e.g. approval of emission inventories, air quality reports, methodologies for air quality assessment methods, systems and equipment for emission control and measurement and even interlaboratory comparison programmes.

Horizontal coordination on central level is based on exchange of information and performing of some tasks by line ministries. A few specific requests defined as obligations of sectoral ministries by Law No. 104/2011 on ambient air quality, e.g. assessing impact of air pollution on human health or impact on forests and vegetation, are not performed since there were no available studies or reports produced based on these obligations. No interministerial structures (e.g., commissions, committees, working groups) are established with specific tasks related to cooperation on air protection.

National Environmental Protection Agency

The other important player in the area of air quality management is NEPA. Under NEPA, the Air Quality Assessment Centre has the following responsibilities: provision of technical support for the elaboration of normative acts, development of annual reports on ambient air quality at national level, development of the national inventory of air pollutant emissions, verification and management of data on air quality from the National Air Quality Monitoring Network, collection and validation of data from local air emission inventories. The Centre is also in charge of approval of the plans for maintaining and improving of the air quality, providing the necessary data for informing the public about the air quality and making available air quality data to the Ministry of Health for assessment of impact of air pollution on health. In contrary to its title, the Air Quality Assessment Centre does not participate in the assessment of air quality, its role is reduced to data centre. It collects data from LEPAs, compiles it and distributes it to the Ministry of Environment Waters and Forests, while its role is supposed to be more substantial, with focus on data analysis. However, the limited scope of analysis of air quality data performed within development of the annual report on air quality is not widely used. There is no policy based on that analysis, and there is no provision of explanation on the state of air quality to the general public. Annual reports are not published at the air quality portal and NEPA’s website (www.anpm.ro) is not functional. Moreover, reported data on air quality lack required time coverage limiting data validation process, while air emission inventory and GHG inventory for the same period show significant discrepancies for some gases and activities.

The National Air Quality Reference Laboratory, another body within NEPA, provides technical and scientific support for air quality monitoring and emission measurement, establishment of methods for determining the concentrations of pollutants in ambient air, demonstrating, where necessary, their equivalence with the reference methods, elaborating the standard operating procedures and the quality assurance and control procedures, ensuring the accuracy of the ambient air quality measurements, including by organizing inter-comparisons at national level, organizing and controlling the activity of the calibration units organized within the local public authorities for environmental protection. These calibration units are not accredited as they are supposed to be in line with air quality monitoring standards. Once they will get accreditation, their work will be controlled by the National Accreditation Body.

NEPA has local branches (LEPAs) in each county, which perform various air quality management tasks. Although not having accredited laboratories for both air quality monitoring and calibration of instruments, LEPAs perform air quality monitoring and analysis, data collection and processing, as well as maintenance of air quality stations which makes Romanian air quality monitoring system inconsistent with EU legislation on air quality monitoring and pose a risk related to data accuracy and reliability. LEPAs are also responsible for compiling of local emission inventories. Enterprises subject to environmental permits or integrated environmental permits should report self-monitoring reports to LEPAs (chapter 2). LEPAs monitoring departments then check the self-monitoring reports when submitted. If problems are detected, the National Environmental is then notified.

National Environmental Guard

NEG with its territorial branches oversees the implementation of the Law on ambient air quality. Apart from the regular inspection tasks, in line with the law, they control the implementation of the air quality plans. Although the task description is not sufficiently elaborated in the law, the inspection alone cannot ensure the implementation of air quality plans due to various types of actions and actors involved. The implementation of measures to
improve and maintain air quality is not ensured through additional mechanisms, starting with regular reporting on implementation and recognizing obstacles in implementation process in those reports. The Guard also checks compliance of equipment used for monitoring of air quality; however, the Guard is not accredited to perform equipment compliance check.

_Fiscal and economic measures_

Air polluters are obliged to pay a tax for emitting certain air pollutants in the ambient air. Tax is calculated per kg of emissions and is different for various pollutants on the basis of their toxicity (Table 8.3). Revenues from air pollution taxes go to the Environmental Fund Administration. The financial statement of the Fund for 2018 shows that based on GEO No. 196/2005, the Fund collected some 4.04 million lei. This amount includes also revenues from other taxes, such as taxes for disposal of inert, non-hazardous, electric and electronic waste.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
<td>0.02</td>
</tr>
<tr>
<td>NOx</td>
<td>0.04</td>
</tr>
<tr>
<td>SOx</td>
<td>0.04</td>
</tr>
<tr>
<td>POPs</td>
<td>20.00</td>
</tr>
<tr>
<td>Lead</td>
<td>12.00</td>
</tr>
<tr>
<td>Cadmium</td>
<td>16.00</td>
</tr>
<tr>
<td>Mercury</td>
<td>20.00</td>
</tr>
</tbody>
</table>

_**Table 8.3: Taxes for emissions of pollutants into the atmosphere, lei/kg**_

The Fund supports air protection-related activities. For example, in 2018, the Fund supported the Programme for the development and optimization of the National Air Quality Monitoring Network (total value of 100 million lei) and Programme on promoting energy-efficient non-polluting road transport vehicles and recharging stations. Within the latter, the Fund supported the acquisition of buses and electric trolleybuses to improve public transport with 449.6 million lei, as well as 270 electric vehicles, of a total value of 11.3 million lei, where some 65 per cent were acquired by legal entities and 35 per cent by citizens. Moreover, the Fund invested 14 million lei in the Programme to stimulate the passage of freight from road transport to rail, in order to reduce air pollution and GHG emissions from transport sector. The Fund also runs some long-standing multiannual programmes which prove their positive impact on air quality over the course of previous years, such as the RABLA Programme (box 8.1) and Programme Casa Verde (box 8.2).

**Box 8.2: Programme Casa Verde**

The Programme Casa Verde was initiated in 2010, providing financial assistance for the installation of solar collectors, heat pumps or biomass heating systems in residential and public buildings. The amount of the subsidy depended on the type of the heating system and was up to 6,000 lei (€1,430) for solar collectors, up to 8,000 lei (€1,900) for heat pumps and up to 6,000 lei (€1,430) for biomass heating systems. In the first year some 200 households had benefited of the Programme. The Programme was renewed in 2011 with 6,987 individual and 60 corporate beneficiaries. It continued in the following years attracting more participants. During 2013–2014 it was available only for public buildings, but it was re-launched again. In 2016, the Programme Casa Verde Plus added to the renewable energy solutions financed in the Programme Casa Verde investments in increased energy efficiency, thermal insulation, LED lighting, green roofs and ecological materials. In 2019 the Programme financed the installation of photovoltaic panels on residential buildings. The Programme is aimed towards individuals who want to become electricity producers. In September 2019 funds were ensured for 33,000 households who will be in position to negotiate with the electricity companies about the price of the electricity they can provide to the network. The budget allocated to the Programme Casa Verde in 2019 was 656 million lei (€138 million).

_Information measures_

The major source of information on air quality in Romanian is the web portal [www.calitateaer.ro](http://www.calitateaer.ro) presenting data from the National Network for Air Quality Monitoring. Monitoring stations are presented on an interactive map and are identified with the code of the station, but the name or characteristics of the monitoring location are
mentioned. The information on the Air Quality Index for a specific location is available only if the longitude/latitude or the code of the monitoring station is known.

Although during the winter 2019/2020 there were many cases when the Air Quality Index at some measurement points showed value “very poor” there were no alerts or advices to vulnerable groups of population on how to protect themselves from polluted air episodes and what is their role in reducing the pollution. For example, the state air quality portal www.calitateaer.ro has only one question among “frequently asked questions”, and a very relevant one: Why air quality indices for PM$_{10}$ are so high? The answer is short, but not to the point: “The air quality indices for PM$_{10}$ are calculated based on automatic measurements that do not represent the standard measurement method. Most quality indices will be high because of PM$_{10}$, especially during the winter.” No further explanation on results acquired by standard (gravimetric) method, although used in Romania, no data comparison and no explanation why PM$_{10}$ concentrations are higher in the winter are provided. Moreover, no explanation on the meaning of the air quality indices is provided. Under the heading “the main sources of emissions” there is a link to Romania’s IIR for 2015. these reports are too technical for this purpose. Public needs short, understandable and updated information. The portal does not offer any analysis of air quality, while raw data cannot be exported except in a limited series, through the application that requires multi-step selection of different parameters. No information on adopted air quality plans or other policy documents is available. The link to the latest annual air quality report is not in function.

8.7 Assesment, conclusions and recommendations

Assessment

The concentration of air pollutants in Romania assessed on the basis of the available data for the period 2009–2018 shows a descending trend although some issues of concern remain, such as some cities had of PM and NO$_2$ concentrations above the annual limit values set by the EU and domestic legislation. According to the 2020 IIR, residential stationary combustion is one of the key category emission sources for all major pollutants, with a dominant ratio of national emissions of particulate matters, carbon monoxide, cadmium, zinc, polycyclic aromatic hydrocarbons, dioxins and furans. The deterioration of the district heating system therefore poses a matter of concern. The number of functioning district heating systems decreased by approximately 78 per cent during the period 1989–2014 resulting in an increase of firewood use for domestic heating by the large portion of the population and consequent bad air quality episodes during the winter months.

The EC expressed concerns related to quality of data and functioning of the Romanian air quality monitoring network, followed by an infringement procedure on this matter. During the period 2009–2018, more than half out of total 149 stations did not produce sufficient quantity of data during the whole period. Data sets have gaps complete data sets are available for 49 per cent of stations for SO$_2$, 74 per cent for O$_3$, 30 per cent for NO$_2$, 32 per cent for PM$_{10}$ and from 21 per cent for PM$_{2.5}$. Moreover, some parameters were not monitored at sufficient number of stations of appropriate type.

In defining its air quality zones and agglomerations, Romania was very ambitious, defining 41 zone and 13 agglomerations, where all these 54 units deserve equal attention. Zones are defined in administrative borders of counties, while the big urban centres of Romania, which have status of municipalities, are classified as agglomerations. This mode of organization might be suitable for air quality management purposes, as counties and municipalities are responsible for developing and implementing air quality plans, but it is very demanding in terms of air quality monitoring, especially considering high maintenance costs of monitoring equipment.

Romania is implementing various projects contributing to the reduction of air pollution, but the effects of those activities and their cumulative impact on pollution reduction are not analysed, compiled and reported. Health impact of air pollution in Romania is estimated to 26,490 premature deaths annually due to exposure to high concentrations of PM, NO$_2$ and O$_3$. The major impact (23,400 premature deaths) as calculated by EEA is coming from exposure to high concentrations of PM$_{2.5}$. Out of 149 air quality monitoring stations, 3 have automatic analysers for PM$_{2.5}$. According to EEA data, in 2017 the percentage of Romanian population exposed to concentrations of air pollutants above the EU standards was 35.5 per cent for PM$_{2.5}$, 35.2 per cent for O$_3$, 21.4 per cent for PM$_{10}$ and 1.1 per cent for NO$_2$. 
Analysis of filters from additional 30 stations are made by referent gravimetry method, but the most of these analyses are performed by LEPAs laboratories which are not accredited. Hence, data on PM$_{2.5}$ are not meeting data quality objectives. In addition, no national policy exists with measures to reduce PM concentration throughout the country, the deadline for bringing 32 LCPs in line with air emission standards expires in June 202 and National Air Pollution Control Programme as required by the EU legislation by April 2019 is not developed yet. Public policy in the health sector does not elaborate this issue as well. Only Bucharest which concentrates roughly 10 per cent of the total population of the country, was requested to develop an air quality plan with measures to reduce PM$_{2.5}$ concentrations, therefore, not covering other polluted zones. The fact that limited number of air quality plans have been prepared and adopted so far is also a matter of concern.

European Green Deal intentions to push for even stricter air quality standards, aligning them with WHO guidance values will require carefully and strategically planned actions in order to reduce air pollution and minimise its effects on environment and human health.

Although responsibilities for air protection lie at municipal and county level regarding the development, implementation and reporting on air quality plans, air protection mechanism in the country does not exist. In rare cases when decision is not made by the central level itself, it is made by the local branch of the central public administration. All plans, data and reports are submitted to, and at some point, approved by the central administration. Vertical coordination is even less flexible, since the Ministry for Environment, Waters and Forests has to approve all activities of bodies subordinated to it, including very technical ones, while there is limited capacity and expertise in the Ministry of Environment, Waters and Forests to perform these tasks. It is extremely difficult to build comprehensive, responsible, competent and reliable system of administrative bodies for air quality management if all the responsibility, competence and reliability comes from a single source.

Although Romania regularly reports to the EU and the Air Convention on its air quality and emissions of pollutants into the air, summaries of analysis of the large volume of produced data are not available for the public. Data offered at the web portal www.calitateaer.ro, which is the main source of official information on air quality for the general public are insufficient, poorly organized, not easily accessible and not adapted to the needs of citizens.

Romania has made progress in achieving SDG targets 3.9 and 11.6 through the adoption of the SDS 2030 that set up two related targets aimed at (i) reducing the impact of atmospheric pollution on human health and the environment through a special focus on air quality; and (ii) substantially reducing the number of deaths and diseases caused by dangerous chemical products, pollution and the contamination of the air, water and soil. Nevertheless, this strategy still lacks measurable values as well as methods to achieve the targets. The global indicators 3.9.1 and 11.6.2 indicated that the population weighted annual mean concentration of PM increased by almost 7 per cent in the period 2009–2017. Nevertheless, there are not enough measures to decrease exposure of population to air pollution and, in turn, reduce its impact on human health.

Conclusions and recommendations

Optimization of the air quality monitoring network

The number of air quality zones and agglomerations defined in Romania (54 in total) is very demanding in terms of requirements for air quality monitoring, especially considering the high maintenance costs of the monitoring equipment. Depending on the concentrations of air pollutants, three different regimes of air quality assessments can be applied, meaning that continuous monitoring of all parameters is not mandatory in zones with low risk of exceedances of limit values and that it can be supplemented or replaced by indicative measurements and/or air quality modelling.

Despite the large number of air quality monitoring stations (149) and their spatial distribution throughout the country, Romania is under the procedure of infringement of EU law regarding gaps in air quality monitoring. More than one third of air quality monitoring stations are classified as industrial stations although they are, in fact, urban background or suburban background stations since they are exposed to different pollution sources. Romania stopped reporting to the cooperative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe in 2010, although three stations in the network are still marked as “EMEP stations” for monitoring of transboundary impacts. The number of rural background stations and of automatic
stations monitoring PM$_{2.5}$ is insufficient to assess the impact of air pollution on ecosystems and human health. Large industries are not required to monitor air quality and report results to NEPA.

**Recommendation 8.1:**

_The ministry in charge of the environment should:

(a) Revise the list of air quality zones and agglomerations merging them when practical for air quality assessment purposes;
(b) Optimize in each zone or agglomeration the necessary minimum number of air quality stations and monitor all parameters for which the mandatory monitoring is required;
(c) Revise the classification of the types of stations within the air quality monitoring network in accordance with their locations and impacts monitored;
(d) Increase the number of stations with automatic PM$_{2.5}$ monitoring;
(e) Increase the number of rural background stations in order to assess background level of pollution;
(f) Resume reporting data from three EMEP stations to the EMEP Programme;
(g) Require industries subject to environmental permits or integrated environmental permits to monitor and report on air quality to the respective LEPA.

**Improvement of air quality data**

Data on air quality in many cases do not meet data quality objectives. Data reported to EEA lack enough time coverage and therefore do not provide a reliable description of the situation, especially those data acquired by laboratory analysis (contents of heavy metals and PAH in PM) and data from outdated and poorly maintained stations throughout the monitoring network. There is only one accredited laboratory in Romania for air quality assessment - the National Reference Laboratory for Air Quality in NEPA, Bucharest. It collects all the data from local LEPAs but, being processed by non-accredited bodies, these data are, from the technical point of view, questionable. LEPA laboratories are also in charge of the calibration of monitoring instruments, which again requires accreditation.

**Recommendation 8.2**

_The ministry in charge of the environment, through the National Environmental Protection Agency should:

(a) Ensure the calibration of instruments for air quality monitoring, in line with the EU Air Quality Directive;
(b) Improve data time series coverage in zones and agglomerations where continuous automatic monitoring is necessary through regular maintenance of the air quality network.

**Functional strategic framework for improvement of air quality**

Romania lacks a national policy on air protection and its industrial emissions are not aligned with EU standards. All 54 air quality zones and agglomerations, as defined by MO No. 598/2018, are obliged to have air quality plans. This system, with its demanding administrative procedures, has delivered limited results in terms of the number of adopted plans and their implementation. The Ministry of Environment, Waters and Forests issued a methodology for the elaboration of air quality plans, short-term action plans and plans for maintaining air quality (GD No. 257/2015). However, no mechanism is in place to synchronize these documents and to merge reporting on their implementation into a useful synthesis which could show the effects of implemented measures and serve as a basis for further improvements. Even though the air quality situation presents differences across the country, common issues would be better addressed jointly.

For the assessment purposes it is more practical to define zones and agglomerations according to the level of pollution (A, B and C regimes) not strictly following the territorial division. Merging of bordering zones or zones and agglomerations within them would help to minimize the number of monitoring stations, while obligations of administrative units related to air quality management can stay unchanged. In addition, Romania does not use the opportunity given by the Air Quality Directive to combine fixed and indicative measurements in zones and agglomerations where concentrations of air pollutants are between upper and lower assessment thresholds and to rely exclusively on indicative measurements, including air quality modelling in zones and agglomerations where concentrations of air pollutants are below the lower assessment threshold. Application of these principles would
greatly help in optimization of the network, ensuring that continuous monitoring is performed where necessary, while keeping data available for zones with a low risk of exceedances of air quality standards.

**Recommendation 8.3**

The Government should:

(a) Adopt a comprehensive strategic framework for the improvement of air quality, ensuring measurable targets and indicators, a high level of coherence with local air quality plans and regular reporting on implementation effects;

(b) Improve mechanisms for air quality management at the local level by promoting joint air quality plans and providing clear guidance on air quality maintenance and improvement measures within the national strategic framework for the improvement of air quality.

**Reducing the health impact of air pollution**

Air pollution poses a serious threat to public health in Romania, considering data on population exposure and the estimated number of premature deaths and years of life lost due to air pollution. However, no national policies in environment and health sectors address this issue, even though it is necessary to ensure well-being for all at all ages by reducing the health impact of air pollution through appropriate synergy of environmental and health policies. While PM$_{2.5}$ emissions were reduced by some 17 per cent in the period 2008–2018, the population weighted annual mean concentration of PM measured at urban background stations, which is the globally established indicator to monitor achievement of targets 3.9 and 11.6, increased by almost 7 per cent in the period 2009–2017.

**Recommendation 8.4**

In order to achieve global SDG targets 3.9 and 11.6 by 2030, the Government should develop a roadmap to reduce the impact of air pollution on human health and the environment through a special focus on air quality and a substantial reduction in the number of deaths and diseases caused by air pollution.

**Public information**

Information on air quality provided to citizens by the state administration is incomplete, missing the necessary interpretation of air quality monitoring results, air quality indices and emission inventories, advice to the general public in case of bad air quality and guidance on the use of the air quality database. The portal www.calitateaer.ro stores raw data on air quality, but these data are not easily accessible and not relevant to the general public unless accompanied by suitable analysis and explanations.

**Recommendation 8.5**

The Government should raise public awareness on the negative impact of air pollution on human health and the environment, ensuring that data on air quality provided to the public contain all necessary information, such as sources of air pollution, short- and long-term impacts, recommendations for protection of vulnerable population groups and advice on how to contribute to emission reductions.
Chapter 9
WATER MANAGEMENT

9.1 Water resources

Romania’s climate is in general semi-arid. However, there are large differences in rainfall in different areas of the country such that threefold differences in rainfall are observed between the Carpathian Mountain areas and the Eastern Parts (Dobrogea).

Romania has 78,905 km of rivers, with the lower Danube River marking its southern border with Bulgaria. The country has 11 river basins: Crisuri, Banat, Somes-Tisa, Mures, Jiu, Olt, Arges-Vedea, Siret, Buzau-Ialomita, Prut-Barlad and Dobrogea.

Romania has an annual 134.6 billion m³ of total potential water resources (table 9.1). The annual usable water resources are 38.4 billion m³ of which more than half (20 billion m³/year) comes from the Danube River. Usable water resources, including the Danube, amount to 2,660 m³ per person per year, which, compared to the European average of 4,000 m³/person/year, places Romania among the countries with relatively scarce usable water resources. A usable water resources level below the threshold of 1,700 m³/capita is considered to create water stress.

<table>
<thead>
<tr>
<th>Potential natural resource</th>
<th>Utilizable resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior river basins</td>
<td>40.0</td>
</tr>
<tr>
<td>Danube River</td>
<td>85.0</td>
</tr>
<tr>
<td>Groundwater</td>
<td>9.6</td>
</tr>
<tr>
<td>Total</td>
<td>134.6</td>
</tr>
</tbody>
</table>

Source: Romanian Waters, 2016.

Water resource availability shows high variability between river basins and in time. The country’s water resources have had a linear downward trend over the past 20 years. Decreasing water resource trend is identified at the end of spring (May) and early summer (June).

According to multiannual seasonal analysis the largest volume of water was available at the spring season (37.7 per cent) and the smallest at the autumn season (16 per cent). To assess the development of the available water resources EEA used the non-parametric Mann Kendall test. As a result, 51 of the analysed stations showed an increasing trend of water volumes in the autumn and during the winter months, while at the annual level the volumes were decreasing, particularly at the end of spring (May) and early summer (June).

According to the analysis carried out within the National RBMP 2016–2021, all Romanian groundwater bodies were in good quantitative condition because the volume of the long-term water extraction is not exceeding the available water resources. The analysis showed that at the multiannual level the deficient areas regarding the water resource are those corresponding to the hydrographic basins of the Dobrogea, Prut and Vedea, Banat rivers, as well as of the small rivers, direct tributaries of the Danube River.

In average for the period 2012–2017, surface water resources amounted 34 billion m³ and groundwater almost 5 billion m³ (table 9.2). Groundwater resources decreased by 13.75 per cent in the same period. All Romanian groundwater resources were assessed in 2014 by the Laboratory of Hydrogeological Studies and Research. Total value of phreatic groundwater resources in Romania is 158,353.64 l/s (4.99 billion m³); while total value of the deep groundwater resources in Romania is 238,219.13 l/s (7.51 billion m³).

### Table 9.2: Water resource, 2012–2017, million m³

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>40,132</td>
<td>39,364</td>
<td>39,364</td>
<td>39,270</td>
<td>39,270</td>
<td>38,346</td>
<td>38,346</td>
<td>38,346</td>
<td>38,346</td>
<td>38,346</td>
</tr>
<tr>
<td>Surface</td>
<td>33,825</td>
<td>33,953</td>
<td>33,953</td>
<td>33,859</td>
<td>33,859</td>
<td>33,679</td>
<td>33,679</td>
<td>33,679</td>
<td>33,679</td>
<td>33,679</td>
</tr>
</tbody>
</table>


### 9.2 Water quality

According to the EC Environmental Implementation Review 2019 of Romania, the main pressures on surface waters are diffuse pressures from discharges not connected to the sewerage network (25 per cent of surface water bodies) and pollution from agricultural (12 per cent) and urban wastewater (5 per cent). For groundwater bodies the main pressure is the diffuse pollution from agriculture and discharges that are not connected to sewerage networks, both affecting 10 per cent of groundwater bodies.

Agricultural production is a major source of diffuse pollution, mostly as a result of excessive emissions of nutrients and chemicals such as pesticides. According to the EC Environmental Implementation Review 2019 of Romania, nutrient pollution or enrichment impact 27 per cent of surface water bodies followed by organic pollution (17 per cent) while chemical pollution affecting 10 per cent of groundwater bodies.

#### Groundwater

The EC Environmental Implementation Review 2019 of Romania states that all groundwater bodies are in good quantitative status. Between the first and second RBMPs, the proportion of water bodies in good chemical status increased from 93 per cent to 98 per cent. While some water bodies had an unknown status in the first RBMPs, all water bodies were classified in the second ones. However, 56 per cent of water bodies are still classified with low confidence. The spatial coverage of monitoring in rivers and lakes may explain the low confidence in the assessment and the very limited monitoring performed in the biota.

According to the 2018 EEA report on “European Waters Assessment of Status and Pressures 2018”, less than 10 per cent of Romania’s groundwater bodies are not in good chemical status. In Romania, since groundwater is considered as a strategic resource, it is forbidden to abstract groundwater for irrigation.

Out of 141 groundwater bodies monitored in 2017, 28 are considered as low chemical condition. From the analysis of the data obtained from the monitoring of boreholes located on groundwater bodies, most exceedances were recorded on nitrates, ammonium, chlorides, sulphates, lead, orthophosphates, phenols and arsenic. Regarding the pollution of groundwater with nitrates, exceedances of the quality standard for this indicator were registered for 212 boreholes, which represents 13.40 per cent of the total monitored boreholes. The main sources of its pollution with nitrates are:

- Permanent washing of soil impregnated with nitrogen compounds resulting from the application of chemical fertilizers on certain categories of arable land, by atmospheric precipitation and irrigation water,
- Lack of wastewater collection systems, especially in human settlements in rural areas.

Exceedances of the quality standard for nitrates are recorded especially in areas where the soil is affected by the application of chemical fertilizers, areas of large chemical plants, as well as former plants, which may constitute a danger of pollution of the aquifers in the area.

#### Surface water

According to the 2018 report on “European Waters Assessment of Status and Pressures 2018”, more than 90 per cent of the surface bodies are in good chemical status. As the EC Environmental Implementation Review 2019 of Romania states, ecological status/potential is good or high in most of the lakes and rivers (66.14 per cent), but in none of the transitional and coastal waters (figure 9.1). There are very few water bodies with unknown status/potential. However, it states that a further in-depth analysis is needed to assess whether all the requirements

are fulfilled and whether the effects of all newly planned modifications on water body status/potential are assessed at quality element level.

**Figure 9.1: Ecological status or potential of surface water bodies in Romania, percentage**

![Graph showing ecological status or potential of surface water bodies in Romania](image)

*Source: EC Environmental Implementation Review 2019 of Romania.*

**Biological status**

According to the 2018 EEA report on “European Waters Assessment of Status and Pressures 2018”, Romania has high proportion of water bodies in high or good ecological status or potential. According to the report, more than 90 per cent of the surface bodies in Romania are in good chemical status (figure 9.2). The population of sturgeon species is also used as an indicator to monitor quality in the Danube River.

**Figure 9.2: Ecological status of surface water bodies – rivers**

<table>
<thead>
<tr>
<th>Status</th>
<th>Value</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1† High status</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td>2‡ Good status or good potential</td>
<td>2 001</td>
<td>66.13</td>
</tr>
<tr>
<td>3§ Moderate status or moderate potential</td>
<td>1 009</td>
<td>33.34</td>
</tr>
<tr>
<td>4¶ Poor status or poor potential</td>
<td>2</td>
<td>0.07</td>
</tr>
<tr>
<td>5# Bad status or bad potential</td>
<td>8</td>
<td>0.26</td>
</tr>
<tr>
<td>Unknown</td>
<td>5</td>
<td>0.17</td>
</tr>
</tbody>
</table>

*Source: Romanian Waters, 2016*

**Lakes and water reservoirs**

In 2017, water quality was assessed for 23 natural lakes. Out of 23, 9 lakes had good water quality, 13 moderate and 1 bad. The main cause leading to the non-achievement of the quality objective for natural lakes is the eutrophication process, a process favoured by small depths (about 3–7 m - rapid development of algae), agricultural activities leading the enrichment of the waters with nutrients and impact from recreational areas in the vicinity of these lakes. Water quality of 94 water reservoirs was assessed: 58 presented good level water quality and 36 moderate water quality.

**Drinking water quality: physicochemical and microbiological parameters**

As the EC Environmental Implementation Review 2019 of Romania states that no new data on drinking water are available since the last 2017 Environmental Implementation Review, which showed that 99.44 per cent of all drinking water analyses back to 2013 were compliant with the Drinking Water Directive.

**9.3 Water monitoring networks**

In Romania the monitoring programmes became operational in 2006. The National Integrated Water Monitoring System comprises six water subsystems: rivers, lakes, transitory waters, coastal water, groundwater and wastewater (monitoring the control of wastewater discharged into natural receivers). The monitoring covers also
water bodies in protected areas. The monitoring is coordinated by Romanian Waters that also maintains database on water quality. Monitoring programmes defined for groundwater include quantitative monitoring programme and chemical monitoring programme (surveillance and operational).

In order to increase the degree of knowledge of the status of surface water and groundwater and to improve confidence in their assessment, the National Monitoring System was redesigned by updating the network and monitoring programmes in 2015. At national level, approximately 935 surface water bodies (rivers, natural lakes, accumulation lakes, artificial lakes, coastal, transitional and territorial waters), and about 141 underground water bodies were monitored in 2017. The surface water monitoring network consists of 942 gauging stations, spread across 11 water basin administrations, corresponding to the main rivers and watersheds (table 9.3).

Table 9.3: Gauging stations, number

<table>
<thead>
<tr>
<th>Water basin administration</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somes-Tisa</td>
<td>103</td>
</tr>
<tr>
<td>Crisuri</td>
<td>88</td>
</tr>
<tr>
<td>Mures</td>
<td>109</td>
</tr>
<tr>
<td>Banat</td>
<td>80</td>
</tr>
<tr>
<td>Jiu</td>
<td>79</td>
</tr>
<tr>
<td>Olt</td>
<td>104</td>
</tr>
<tr>
<td>Arges-Vedea</td>
<td>65</td>
</tr>
<tr>
<td>Buzau-Ialomita</td>
<td>56</td>
</tr>
<tr>
<td>Siret</td>
<td>131</td>
</tr>
<tr>
<td>Prut-Barlad</td>
<td>79</td>
</tr>
<tr>
<td>Dobrogea-Litoral</td>
<td>48</td>
</tr>
</tbody>
</table>

*Source: Romanian Waters, 2016.*

The physico-chemical and biological monitoring of the water resources is done by sections of fast flow control (on a daily and weekly basis) and of slow flow control (on a monthly basis). Under fast flow, data are daily monitored for approximately 12 quality indicators in more than 60 surveillance sections located on important rivers near the main water sampling and discharge sections. Under slow flow, data are monitored for 50–60 quality indicators. The determinations are carried out within the laboratories of physico-chemical, biological and bacteriological analyses organized at the level of the basin districts and of the water management systems.

There are also several automatic stations equipped with sensors for water level, rainfall, water and air temperature. This is part of the DESWAT Hydrological Forecast System, whose implementation started after the 2005 flooding. Since the hit provides the decision makers with analysis of a massive volume of data, identifying and interpreting, by running large-scale forecast models, hydrological phenomena which could develop into a flood. Hydrological warnings and alerts then can be generated and distributed to the public and authorities charged with flood defence in Romania.

As at December 2019, the meteorological monitoring system comprised 8 radar and 164 monitoring stations – the latter especially for forecasting heavy rainfalls and thus potential flash floods.

However, gaps exist in data on water quality, especially on drinking water, mostly because the management of drinking water provisions are distributed among municipal companies, county councils and regional operating companies. Moreover, a notable part of the population has their own water wells without a regulated quality monitoring.

### 9.4 Water demand and supply

#### Water demand

Since 1990, the total water demand has diminished due to the structural changes in the Romanian economy, such as industrial restructuring and closure of many platforms of heavy industry; diminished irrigation activity caused by the introduction of the water fees which lead to a closure of non-viable farms and agricultural enterprises and decrease of drinking water demand through water tariff increases and the switch from billing based on consumption estimates to actual metering.
As a result, the total water demand dropped from 20.4 billion m³ (close to full utilization of the country’s usable water resources) in 1990 to about 6.8 billion m³ in 2017 (Table 9.4). As the water demand is less than 30 years ago, with the existing water infrastructure, the country can assure a higher quantity of water than its demand. In 2019, water abstraction was at a lower level than the level of overall availability, indicating a certain degree of flexibility to cover future additional demand (given that the capacity of water management infrastructure was built to meet demand level of over 20 billion m³).

### Table 9.4: Water abstraction and demand, 2012–2018, million m³

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstraction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater</td>
<td>598</td>
<td>581</td>
<td>554</td>
<td>590</td>
<td>635</td>
<td>646</td>
</tr>
<tr>
<td>Surface water</td>
<td>5,884</td>
<td>5,837</td>
<td>5,715</td>
<td>5,868</td>
<td>5,729</td>
<td>6,116</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6,482</td>
<td>6,418</td>
<td>6,269</td>
<td>6,458</td>
<td>6,364</td>
<td>6,762</td>
</tr>
<tr>
<td>Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water collection, treatment and supply</td>
<td>1,041</td>
<td>969</td>
<td>1,003</td>
<td>1,019</td>
<td>1,043</td>
<td>1,035</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>1,093</td>
<td>1,135</td>
<td>1,095</td>
<td>1,290</td>
<td>1,243</td>
<td>1,490</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>3,211</td>
<td>3,313</td>
<td>3,353</td>
<td>3,398</td>
<td>3,382</td>
<td>3,468</td>
</tr>
<tr>
<td>Electric energy production and distribution</td>
<td>1,125</td>
<td>990</td>
<td>805</td>
<td>740</td>
<td>688</td>
<td>756</td>
</tr>
<tr>
<td>Other activities</td>
<td>12</td>
<td>11</td>
<td>13</td>
<td>12</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6,482</td>
<td>6,418</td>
<td>6,269</td>
<td>6,458</td>
<td>6,364</td>
<td>6,762</td>
</tr>
</tbody>
</table>


However, the situation varies from river basin to river basin both in terms of demand and availability. The Dobrogea-Litoral Water Basin for example shows higher demands and less supply while the Somes-Tisa Basin shows a contrary picture. National average figures can be misleading and fail to reflect the situation of water scarcity or the water stress in several river basins. Furthermore, many elements of water management infrastructure, e.g. abstraction and wastewater plants, have deteriorated due to years of inadequate maintenance and are not functioning at their initial design capacity.

The National Institute of Hydrology and Water Management developed a methodology to forecast water use requirements until 2020 and 2030. The purpose is to assess water quantities needed in the coming years to evaluate water policy development options to ensure the water use requirements. The methodology proved to provide results close to reality for households, agriculture and other sectors, however, the forecast of industry needs is depending on macroeconomic indicators, such GDP and share of industry in GDP, that are estimated. The model forecasted for 2030 as water use requirements for the minimal scenario 10 million m³, medium scenario 12 million m³ and maximum scenario 15 million m³. The medium scenario or environmental scenario forecasted a double use compared to 2017.

The Recommendation 7.1 in the second EPR of Romania provided the Government to assess future drinking water needs in order to consider exploring additional water resources and the impact of degradation of water reservoirs on water management. This recommendation remains valid.

The number of wastewater treatment plants reduced by 38 per cent from 2012 to 2015 (Table 9.5). No data are available after 2015. Wastewater generation decreased by 61 per cent in the same period (Table 9.6).

### Table 9.5 Wastewater treatment plant stages by type of plants, 2011–2015, number

<table>
<thead>
<tr>
<th>Stages</th>
<th>Urban</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011</td>
<td>2012</td>
<td>2013</td>
<td>2014</td>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>282</td>
<td>376</td>
<td>107</td>
<td>112</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>217</td>
<td>220</td>
<td>299</td>
<td>321</td>
<td>327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>23</td>
<td>23</td>
<td>65</td>
<td>48</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>475</td>
<td>490</td>
<td>480</td>
<td>133</td>
<td>142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>179</td>
<td>207</td>
<td>201</td>
<td>197</td>
<td>196</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>25</td>
<td>27</td>
<td>20</td>
<td>15</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>190</td>
<td>195</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>4</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9.6: Wastewater generation by activity sectors, 2012–2018, million m³/y

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4,982.90</td>
<td>2,007.18</td>
<td>1,974.70</td>
<td>1,942.75</td>
<td>1,954.10</td>
<td>1,885.13</td>
<td>1,914.81</td>
</tr>
<tr>
<td>Of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture, forestry, fishing</td>
<td>2.51</td>
<td>2.23</td>
<td>1.82</td>
<td>1.83</td>
<td>3.14</td>
<td>2.15</td>
<td>2.28</td>
</tr>
<tr>
<td>Mining industry</td>
<td>52.96</td>
<td>58.89</td>
<td>54.84</td>
<td>51.56</td>
<td>57.09</td>
<td>38.01</td>
<td>37.70</td>
</tr>
<tr>
<td>Food processing industry</td>
<td>23.41</td>
<td>24.10</td>
<td>25.27</td>
<td>25.16</td>
<td>19.79</td>
<td>17.32</td>
<td>19.73</td>
</tr>
<tr>
<td>Basic metals</td>
<td>114.72</td>
<td>100.80</td>
<td>106.00</td>
<td>93.91</td>
<td>90.63</td>
<td>72.89</td>
<td>68.05</td>
</tr>
<tr>
<td>Transport</td>
<td>2.73</td>
<td>6.34</td>
<td>6.26</td>
<td>5.84</td>
<td>6.57</td>
<td>5.86</td>
<td>6.42</td>
</tr>
<tr>
<td>Textiles</td>
<td>5.49</td>
<td>3.19</td>
<td>6.86</td>
<td>5.14</td>
<td>29.39</td>
<td>4.88</td>
<td>3.98</td>
</tr>
<tr>
<td>Paper &amp; paper products</td>
<td>2.71</td>
<td>2.98</td>
<td>3.19</td>
<td>3.46</td>
<td>3.87</td>
<td>3.68</td>
<td>4.37</td>
</tr>
<tr>
<td>Chemical products &amp; refined petroleum</td>
<td>86.67</td>
<td>78.18</td>
<td>75.51</td>
<td>70.28</td>
<td>65.30</td>
<td>72.74</td>
<td>67.29</td>
</tr>
<tr>
<td>Production and distribution of electricity</td>
<td>3,466.15</td>
<td>516.93</td>
<td>580.20</td>
<td>551.61</td>
<td>506.52</td>
<td>546.37</td>
<td>554.54</td>
</tr>
<tr>
<td>Construction</td>
<td>2.87</td>
<td>4.67</td>
<td>6.74</td>
<td>7.44</td>
<td>8.98</td>
<td>8.21</td>
<td>7.30</td>
</tr>
<tr>
<td>Of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial wastewater</td>
<td>4,000.01</td>
<td>999.67</td>
<td>1,066.99</td>
<td>1,005.25</td>
<td>971.31</td>
<td>950.49</td>
<td>972.71</td>
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<tr>
<td>Domestic wastewater, of which:</td>
<td>982.89</td>
<td>1,007.51</td>
<td>907.71</td>
<td>937.50</td>
<td>982.79</td>
<td>934.64</td>
<td>942.10</td>
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<tr>
<td>Other activities</td>
<td>166.45</td>
<td>409.21</td>
<td>328.42</td>
<td>433.09</td>
<td>488.29</td>
<td>493.64</td>
<td>443.73</td>
</tr>
<tr>
<td>Households activities</td>
<td>816.44</td>
<td>598.30</td>
<td>579.29</td>
<td>504.40</td>
<td>494.50</td>
<td>441.00</td>
<td>498.36</td>
</tr>
</tbody>
</table>


Water abstraction

Manufacturing, mining and quarrying

In 2017 the manufacturing water demand was about half of the total water demand. However, the sector raises quality concerns about wastewater treatment.

Agriculture, forestry and fishing

In 2017, the Agriculture, forestry and fishing sector’s water demand was 22 per cent of the total demand and showed an increase of 36 per cent compared to 2012. In the 1980s the policy was that Romania would be the “food basket of Europe”, thus large-scale developments were initiated to expand arable lands. Romania used to be ranked third among all European countries—just behind Spain and Italy—for its 3 million hectares of irrigated lands.

After the change of regime in 1989, agricultural land was privatized but the new owners did not maintain the irrigation systems, which were first abandoned and then vandalized. Nowadays the country has no more than 1 million hectares of land that is irrigable. As effects of climate change are expected to increase, the need for irrigation will increase in some parts of the country, especially in the lower part of Danube River.

Energy

Currently, between 25 and 30 per cent of the country’s power generation comes from hydropower. The water demand for the energy sector has decreased by 33 per cent since 2012 and was a bit more than 11 per cent of the whole demand in 2017. Due to the lack of adequate maintenance and rehabilitation, many dams are operated well below their design level to ensure safety (box 9.1).

Transport

Navigation traditionally plays an important role in the transport and is facilitated by hydro-morphological infrastructures such as a regulated branch through the Danube Delta named Sulina Branch, which offers a quick and safe access through the Danube River to the Black Sea. There is also an access from the Danube to the Black
Sea through the canal between Cernavodă and Constanța. Bega Canal offers accessibility for very small boats between the Danube and the city of Timisoara. The only river that is dredged in Romania is the Danube River.

Box 9.1: Dams

Romania has 250 large and some 300 smaller dams. Some hydropower stations are rather old, with an average age of around 40 years. Built between 1970 and 1990, these dams have deteriorated due to the lack of maintenance and rehabilitation. They need major rehabilitation work, along with retrofitting to adjust to changing demand and climate conditions, and new regulations (environmental flows). In 2009, World Bank listed 276 dams, of which 72 were classified as having important risk factor, 140 as having very important risk factor and 27 as exceptionally important risk factor. About 20 per cent of them are privately owned. Private investors do not tend to invest into rehabilitation of the whole infrastructure such as dykes and dams. Nowadays, many of them have to be operated below their original design level to ensure the safety of downstream population.

Constructions of certain hydropower stations stopped some 30 years ago, and those still have not been finished. In some cases, temporary solutions count on with smaller discharge thresholds, thus raising security concerns, such as Siret–Bărgăș Channel, recently transferred from the management of the National Administration Romanian Water to the Land Reclamation National Agency. Other construction sites are still waiting for governmental decisions, such as the channelization of the lower part of Olt River with hydropower stations and blocks for navigation.

Hydropower energy has gained importance recently, as it is carbon free. Establishing new large-scale hydropower station is still a rather long and difficult process, so investors tend to choose building micro-power stations.

In the last decade, micro-power stations (typically producing from 5 kW to 100 kW of electricity) were considered as green and renewable energy resources. Some of them were not carefully designed, and, NGOs complained that they also fragmented the landscape. Hydropower plants were often installed in protected habitats, leading to an infringement case initiated by the EC in 2015 under the Habitats Directive. Engineers emphasize that from a simply technical point of view, the abundance of micro-power stations does not give as great of an output as fewer but bigger hydropower stations. On the other hand, the process for permission, that lies in the hands of local governments, may threaten safety considerations as well as continuity of ecosystems. As of December 2019, a permit of a hydropower station must include a forecast on the hydrological regime (considering high, low and mean thresholds) together with an economic analysis.

The deployment of micropower stations therefore has since been stopped; no new ones have been installed in the last years, and no more national financial funding is provided for that. The EU infringement process has been launched for investigating the details of deployment of micro power stations.

Dams have notable impact on landscape and biodiversity, while also can be great instruments for water retention. This latter aspect is certainly a pro for them in the age of climate change. On the other hand, water demand patterns have shifted notably after the 1990s changes. Climate change is also modifying the hydrological regimes, already causing water discharge deficit especially during summer months. New regulatory requirements, such as compliance with environmental flows, are in place.

Households

According to the National Institute of Statistics, the percentage of population connected to water supply systems increased from 60.23 per cent in 2012 to 69.20 per cent in 2018 (table 9.7). Romania considers the insufficient connection rate, water scarcity and insufficient quality of water resources a priority for EU funding. Drinking water use also decreased due to the installation of water meters from 695 million m$^3$ in 2012 to 567 million m$^3$ in 2018 (table 9.8). According to Eurostat, the consumption of water per inhabitant diminished from 33.9 m$^3$ in 2012, to 28.7 m$^3$ in 2015.

<table>
<thead>
<tr>
<th>Table 9.7: Population connected to water supply, 2012–2018, per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Table 9.8: Drinking water supplied to consumers, 2012–2018, million m$^3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1,035.43</td>
</tr>
<tr>
<td>of which: for household use</td>
</tr>
</tbody>
</table>

As of December 2019, about 4.5 million Romanians are lacking access to piped water within their house. According to the World Bank’s report “Romania Water – Diagnostic Report. Moving toward EU Compliance, Inclusion, and Water Security”, a universal access to piped water will not be achieved before 2040, at best, under a “business-as-usual” scenario. This is a major public health issue since about half of those lacking access to piped water, close to 2.5 million people or 12 per cent of the national population, are reported to be self-supplied through unsafe water sources.

Romania has the worse universal piped water access rate than all non-EU countries in the Danube basin except the Republic of Moldova. At the current pace of growth of the coverage with piped water services, Romania would be able to achieve universal access between 2040 and 2050 only.

Compliance with the Urban Wastewater Treatment Directive has been challenging for Romania. According to the World Bank’s report, the country started from a very low base level in terms of sewerage infrastructure and had negotiated the most generous interim deadlines (final compliance in 2018) among EU-13 countries. Despite having carried out investments together with implementing supporting reforms, it is today the worst performer among EU countries for compliance with the Directive. World Bank’s report also concludes that “it is crucial for the Romanian Government to engage in a prioritization exercise”, although that document places an emphasis on finance and investment. The Recommendation 7.2 in the second EPR of Romania provided the Government various steps to support the implementation of the Directive and therefore the implementation of the recommendation is ongoing.

The final deadline for Romania to reach compliance with the Directive was 31 December 2018 according to the Accession Treaty. Given the very low compliance rates, the Commission decided to launch an infringement procedure against Romania based on the 2013 and 2015 intermediate deadlines set in the Accession Treaty, i.e. on compliance of agglomerations above 10,000 PE with collection and treatment requirements. The issue of wastewater is targeted in the RBMPs, which aims to implement the Directive.

In the period 2009–2015, in the Danube Integrated River Basin District, sewerage systems and urban wastewater treatment plants have been constructed, upgraded or extended at almost 900 sites. According to EEA, in Bucharest, after the urban wastewater treatment plant started operating, concentrations of organic and nutrient pollution indicators decreased.

Romania made great steps for improving water quality, especially by constructing and operating wastewater treatment plants. Nevertheless, investments needed to ensure appropriate collection and treatment of wastewater from the remaining agglomerations are estimated at €12 billion. This figure remains high despite several EU supported projects. Other ongoing studies suggest even higher investment needs.

The connection rate to sewage collection systems increased from 46.84 per cent in 2012 to 52.70 per cent in 2019 (table 9.9). The percentage of the population connected to wastewater collecting systems without treatment decreased from 9.20 per cent in 2012 to 1.29 per cent in 2019. By the end of 2016, in rural agglomerations less than 15 per cent of the sewerage load was collected and treated. In 2019, about 46.15 per cent of the population lived in rural area. A portion of the rural population is also resisting to connect to both piped water and sewerage networks claiming affordability constraints (both to finance the connections and to pay the recurrent bills).

Table 9.9: Population connected to wastewater treatment plants and collecting systems, 2012–2019, 1,000

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban wastewater treatment plants</td>
<td>8,590</td>
<td>8,842</td>
<td>8,951</td>
<td>9,052</td>
<td>9,416</td>
<td>9,710</td>
<td>10,035</td>
<td>10,264</td>
</tr>
<tr>
<td>Primary treatment</td>
<td>1,644</td>
<td>1,756</td>
<td>1,473</td>
<td>1,208</td>
<td>809</td>
<td>626</td>
<td>677</td>
<td>723</td>
</tr>
<tr>
<td>Secondary treatment</td>
<td>2,857</td>
<td>3,503</td>
<td>3,825</td>
<td>2,905</td>
<td>2,055</td>
<td>1,207</td>
<td>1,213</td>
<td>1,371</td>
</tr>
<tr>
<td>Tertiary treatment</td>
<td>4,089</td>
<td>3,584</td>
<td>3,652</td>
<td>4,939</td>
<td>6,552</td>
<td>7,877</td>
<td>8,146</td>
<td>8,170</td>
</tr>
<tr>
<td>Industrial wastewater treatment plants</td>
<td>51</td>
<td>42</td>
<td>48</td>
<td>38</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Wastewater collecting systems</td>
<td>9,413</td>
<td>9,342</td>
<td>9,392</td>
<td>9,472</td>
<td>9,703</td>
<td>9,979</td>
<td>10,293</td>
<td>10,515</td>
</tr>
<tr>
<td>With treatment</td>
<td>8,641</td>
<td>8,884</td>
<td>8,998</td>
<td>9,090</td>
<td>9,416</td>
<td>9,710</td>
<td>10,035</td>
<td>10,264</td>
</tr>
<tr>
<td>Without treatment</td>
<td>772</td>
<td>458</td>
<td>393</td>
<td>382</td>
<td>287</td>
<td>269</td>
<td>258</td>
<td>251</td>
</tr>
</tbody>
</table>

There are also discrepancies in water supply and sanitation access between Roma and non-Roma, mostly in urban marginal areas due to issues of land use, property titles, and the rule of law more generally.

According to the EC Environmental Implementation Review 2019 of Romania, the last forecasted projects should be completed by 2027–2030, far beyond the final deadlines of 2015 and 2018 set in Romania’s Accession Treaty. In order to reach compliance, the Review recommends prioritising water projects proposed for support from EU funds, speeding up their preparation and implementation. Moreover, the revenues generated by water companies are expected to ensure the operational continuity of the constructed infrastructure.

**Tourism and leisure**

Water tourism could offer a valuable opportunity to benefit from the good ecological status of many Romanian rivers, specially the pristine rivers of Transylvania, by promoting sustainable development projects in remote and low-income rural areas. This is an attractive way to monetize the good ecological status of rivers for the benefit of local populations. Tourism in the Danube Delta is also an important local economic activity, which benefits from the good water quality of the Danube River.

**Sludge**

The sludge from wastewater treatment may cause problems. The gradual development of the wastewater sector in Romania leads to an increase in the quantities of sludge generated in urban and industrial wastewater treatment plants that require solutions for disposal. Since 2016, sludge-related data collection improved. In 2018, sludge disposed reached 100 per cent sludge production (figure 9.3). Sludge is analysed to check whether it can be taken to agriculture as soil fertilizer. In 2018, 45.4 per cent was landfilled, 14.7 per cent use in agriculture, 1.1 per cent in compost, 3.6 per cent incinerated and on other proceedings, such as landscaping (35.2 per cent).

The Recommendation 7.3 in the second EPR of Romania asked the Government to identify options for safe handling of sludge from wastewater treatment. The implementation of the recommendation is ongoing.

**Figure 9.3: Sludge production and disposal, 2013–2018, 1,000 tons**


**Accidental Pollution**

In 2017, 70 accidental pollution cases were registered. Pollution comes from petroleum product and other hydrocarbons (40 per cent), semi-solid and solid waste (27 per cent), low oxygenation conditions (8.5 per cent), unidentified substances (8.5 per cent), mine waters (5.7 per cent) and other sources (2.8 per cent). Oil pollution is largely due to breaking of oil and saltwater pipelines.

**9.5 Impact from and adaptation to climate change**

The drastic drop in water demand since 1990 has provided a buffer for water resources management giving the country - from a quantitative point of view - a false sense of water security that can be challenged by climate
change. However, climate change impact is already tangible in Romania. River discharge often shows lower volume than the average of that period, for example during the autumn of 2019, the Danube River had a discharge volume which was less than half of the period average.

There are decreases in the minimum flow indicators at 55 hydrometric stations (74.3 per cent of the total trend stations and 50 per cent of the total analysed stations) for a confidence level greater than 90 per cent. In contrast, there are increases in the minimum flow indicators at 19 hydrometric stations (17 per cent of the total analysed stations) and without trend for 36 stations (33 per cent).

Water basin administrations with the predominance of hydrometric stations that have a significant decreasing tendency of minimum flows are Prut-Bârlad, Someș-Tisa, Crișuri and Mureș. Moreover, at all stations analyzed within the water basin administrations of Prut-Bârlad and Crișuri, and at most of the stations analyzed within Someș-Tisa, have noted significant decreases in the evolution of annual minimum rates over different durations of time.

There is an increasing trend in deficit indices (volume and duration), for the Q90 and Q95 thresholds, at 39 hydrometric stations (86.7 per cent of the total trend stations and 35.5 per cent of the total stations) and, respectively, at 33 hydrometric stations (84.6 per cent of total trend stations and 30 per cent of total stations).

Danube River discharge especially is being monitored because of the Cernavodă nuclear power plant. If the water level is lower than a certain threshold then the nuclear power plant operation must be limited or even stopped. This has happened in 2001 and 2002. Temperature of cooling water also is also monitored.

While mean values of projected river discharges are in the acceptable range, it is rather likely that in the future the country would face short time periods with extremely high discharge levels, and longer periods with less than 30 per cent of the present mean levels of discharge.

Heavy rainfalls are common in May, June and July potentially causing serious flash floods. Meanwhile from the second half of July, and especially in August, Eastern and Southern parts of Romania are prone to droughts. For example, in July 2019 these areas entered a dry period, which lasted until December, as in four consecutive months rainfall was below the multiannual monthly levels. Moreover, November 2019 proved to be the warmest month of November ever recorded in Romania, with deviation of 5°C. The EC Environmental Implementation Review 2019 of Romania states that climate change will put further strain on chronically underfunded water resources management by requiring inter alia major investments in dams’ storage and flood protection in order to increase storage for droughts and improve protection from flooding downstream.

Agricultural areas in Romania are affected by droughts (about 7 million ha), erosion by water and landslides (about 6.4 million ha), temporary water deficit (about 4 million ha), compaction (about 2.8 million ha). Drought is the limiting factor affecting the widest area of crops.

The area subjected to desertification, characterized by an arid, semi-arid or subhumid-dry climate is about 30 per cent of the total surface of Romania, being mostly situated in Dobrudja, Moldova, the south of the Romanian Plain and the Western Plain. This area is predominantly used for agriculture (about 80 per cent of the total, 60 per cent of which is arable land) and silviculture (about 8 per cent).

In Romania, drought-affected areas have expanded over the past decades. The most affected areas are in the South and South-East of Romania, but the entire country has felt the effects of extensive pedological drought, especially in the last 30 years.

Climate change is already modifying the hydrological regimes, causing water discharge deficit especially during summer months. As the vessel fleet on the whole Danube River is rather obsolete (being 30 years old in average), navigation raises questions about being environmentally friendly, especially on low CO₂ emissions. The sector lacks a strategic policy that would also consider cases when inland navigation has more advantages than rail transport. Existing technical frames for inland navigation were not built considering low summer water recharges, respecting nature conservation, and using renewable energy resources as fuel.
Romania has protocols with all neighbouring countries on exchanging latest monitoring data related to climate change. In June 2019, Romania launched the initiative to host a European Agrometeorology Centre for the WMO Europe Region in Romania. The aim is to exchange of data and information on drought on a European level. The Centre is expected to start its operation in 2023.

9.6 River basin management

Romania is divided into 11 water basins, by its main river catchment zones, managed by water basin administrations. Romania has a long tradition of river basin management. The water basin administrations issue permits for all constructions or located near the water resources. They also verify data received from other resources, e.g. from the drinking water providers and monitor surface, underground, transitional and coastal water under the Water Framework Directive.

Water basin administrations are also responsible for the elaboration of the RBMP for their respective water basins. They regularly produce internal reports on the implementation of measurements, assessment of the water bodies, and reports on risks. All RBMPs become part of the National River Basin Management Plan, which then is submitted to the European Committee. RBMPs were submitted to the European Committee on time, as World Bank’s report stated. Romania has a good river quality, with 71 per cent of rivers having had a good or high ecological status in 2015.

River basin planning attracts large number of design companies and contractors. This area is not properly regulated. Further development of water management is dependent on government budget and external funding. Remaining cost of overall compliance with EU water legislation has been estimated at €29 billion in the second River Basin Management Plan submitted in 2016.

9.7 Flood management

Land cover and flood vulnerability correlate, but it is not logging only that causes floods. In certain areas forests remain untouched, but severe flash floods can still occur. not only the water retention capacity of forests to count with, but also their protection against potential soil erosion can exacerbate deluge. Transport of increased sediment of certain water flows could damage reservoirs within about five years.

Romania mapped flood risks and submitted Flood Management Plans and complied with the requirements of the Directive 2007/60/EC on the assessment and management of flood risks (Flood Directive). The flood statistics are not always clear since in some cases cause of an accident can be the bad state of a dam or a naturally occurred flood. While the Government is financing flood-related developments, smaller projects are financed by the water basin administrations from their own budget.

The main requirements for flood protection investments identified under the Flood Directive amount to €3.7 billion. However, the requirements under this Directive are limited to risk assessment and submitting the Flood Risks Management Plans to EC — and there is no obligation to report on executing these plans and carrying out identified investments.

The National Risk Management Strategy is being renewed. The Strategy is valid until 2030, but as it is about nine years old, it does not cover new aspects, instruments, responsibilities, provisions, rules and action plans.

The Flood Directive has established a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences associated with significant floods. Romania has adopted and reported its first Flood Risk Management Plans under the Directive and the EC conducted an assessment. The Commission’s assessment found that good efforts were made with positive results in setting objectives and devising measures focusing on prevention, protection and preparedness. The assessment also showed that Flood Risk Management Plans include measures that are not linked to the objectives. In addition, the EC Environmental Implementation Review 2019 of Romania states that there is scope for improving the integration of the flood risk management cycle’s successive steps into the Flood Risk Management Plans.
According to the EC Environmental Implementation Review 2019 of Romania, floods cost on average €140 million per year to the Romanian economy. Annual floods in different parts of the country from 2002 to 2013 have been estimated to have incurred economic losses of more than €6.3 billion. The two catastrophic floods in 2005 and 2010 caused more than 100 deaths and total economic losses of €2.4 billion. The average annual cost of floods has been estimated at €150 million for the 2000–2015 period. The average annual economic losses due to floods have exceed 4 per cent of country GDP in 7 out of 42 counties.

9.8 Management of sea water and coastal areas

According to the 2018 EEA report, Romania bathing water quality in 2018. Out of these 49 bathing waters along the Black Sea, 28 were Excellent, 19 Good, 2 Sufficient, and there was none with a ranking of Poor or Not classified (table 9.10).

<table>
<thead>
<tr>
<th>Year</th>
<th>Excellent</th>
<th>Number</th>
<th>%</th>
<th>Good</th>
<th>Number</th>
<th>%</th>
<th>Sufficient</th>
<th>Number</th>
<th>%</th>
<th>Poor</th>
<th>Number</th>
<th>%</th>
<th>Not classified</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>15</td>
<td>30.6</td>
<td>23</td>
<td>46.9</td>
<td>10</td>
<td>20.4</td>
<td>1</td>
<td>2.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2016</td>
<td>34</td>
<td>69.4</td>
<td>15</td>
<td>30.6</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2017</td>
<td>25</td>
<td>51.0</td>
<td>23</td>
<td>46.9</td>
<td>1</td>
<td>2.0</td>
<td>2</td>
<td>4.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2018</td>
<td>28</td>
<td>57.1</td>
<td>19</td>
<td>38.8</td>
<td>2</td>
<td>4.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Bathing Water Quality in the Season 2018, Romania, by EEA

Water pollution from households represents the main water stress in the area due to unmanaged urban sprawl and illegal buildings along the coast. A large part of the population is not connected to sewage systems. Moreover, households are not obliged to be connected to a wastewater treatment system. This threatens the natural vegetation. Without the natural vegetation, the land is prone to erosion. Nitrate pollution from agriculture (mostly from chemical fertilizer), like other parts of the country, continues to cause serious problems.

The number of tourists has grown steadily since 2002, reaching a peak in 2017 (of more than 1,247,541 arrivals, increase of 12 per cent compared to 2016). Tourism’s pronounced seasonal character has resulted in a concentrated impact during the summer months (in particular, July and August, representing more than 60 per cent of the total arrivals), when the population of the area multiplies by many times. Still, the current number of tourists is considered manageable and sustainable by the authorities.

Tulcea and Constanta have their own wastewater treatment plans already built, which are not yet in function. While the urban population is connected to the wastewater management system, treated water is discharged into the Black Sea 4 km and 1.5 km offshore, respectively.

9.9 Legal, policy and institutional framework

Legal framework

By joining the European Union in 2007, Romania undertook a legal obligation to comply with EU water legislation. This includes a series of directives focused on either pollution abatement (Urban Wastewater Treatment Directive and Nitrates Directive), monitoring (Drinking Water Directive and Council Directive 76/160/EEC concerning the quality of bathing water), and Water Framework Directive that aims at good water status through a result-based approach at river basin level. Compliance has presented major challenges for Romania (chapter 1). Main laws regulating water issues adopted after 2012 are:

- Law No. 205/2013 amending the GEO No. 71/2010 on establishing the strategy for the marine environment
- Law No. 279/2018 for amending the GEO No. 71/2010 on establishing the strategy for the marine environment
- Law No. 272/2017 regarding the approval of the GEO No. 22/2017 for amending and supplementing Law No. 458/2002 regarding the quality of drinking water
Law No. 158/2014 for the ratification of the Protocol on the protection of the Black Sea marine environment against pollution from sources and activities on land, signed in Sofia on 17 April 2009

According to the EC Environmental Implementation Review 2019 of Romania, since 2013, Romania has a revised action programme in place for the implementation of the Nitrates Directive. The revised legislation has brought significant improvements compared to the previous action programme implementing the Nitrates Directive. The Romanian authorities have decided to apply a “whole territory approach” instead of designating nitrate-vulnerable zones and have changed some of the measures in its action programme, with significant improvements.

Policy framework

As at December 2019 there was no general water management strategy in Romania. Romanian experts consider that a general water strategy bringing all aspects of water management under one strategy umbrella would be useful.

A draft national strategy for the management of sewage sludge is expected to be approved by the Government by the end of 2020. The aim of the strategy is to manage the use of sludge in a way that prevents and reduces harmful effects on soil, water, vegetation, animals and humans. The strategy will also support the implementation of the Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture. According to the strategy, 50 per cent of produced sludge would be used in agriculture by 2040.

Sustainable Development Goals and targets relevant for the chapter

The World Bank’s report stated that Romania is not on track for complying with the SDG 6 (ensure availability and sustainable management of water and sanitation for all). Currently about 12 per cent of the population are reported to rely on unsafe and non-potable water sources. The report suggests defining a strategy to ensure access to safe potable water for those households that will still rely on self-supply from private wells in the medium term. Romania has programmes and strategies that support implementation of the targets:

- Strategy for the contribution of the operational programme to the EU Strategy for smart, sustainable and inclusive growth and the achievement of economic, social and territorial cohesion;
- Large Infrastructure Operational Programme 2014–2020 (LIOP is financed from the national budget and EU and represent the leading programme to support Romania meeting the requirements on drinking water and urban wastewater treatment);
- Priority Axis 3 - The development of environmental infrastructure based on an efficient management of resources;
- National Programme for Local Development financed from the national budget and dedicated to the development of local infrastructure in order to ensure in each locality a minimum set of public services, inter alia for the following domains: health, water and sewerage. Most Programme funds allocated for WSS projects (94 per cent) are targeted at rural area;
- National Strategy for the Sustainable Development of Romania 2030 (chapter 1);
- National Strategy on Waste Management 2014–2020 (chapter 10);
- National Climate Change Strategy 2014–2020 (chapter 7);
- updated National RBMP, including the Programmes of Measures, 2016–2021, according to the EU WFD.

Sustainable Development targets

According to the Global Health Observatory, the estimated mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (indicator 3.9.2 of the target 3.9 (by 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination) in Romania was 0.4 deaths per 100,000 population in 2016. The European Union Average was 0.3 deaths per 100,000 population the same year.

According to the 2019 WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene, the proportion of population using safely managed drinking water services (indicator 6.1.1 of the SDG target 6.1
(by 2030, achieve universal and equitable access to safe and affordable drinking water for all)) increased from 81.81 per cent in 2008 to 81.92 per cent in 2017, an increase of 0.13 per cent. With this pace, roughly 82.07 per cent of the population will use safely managed drinking water services by 2030. However, the population using at least basic drinking water services in Romania was 100 per cent in 2017.

According to the 2019 WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene, the proportion of population using safely managed sanitation services in all areas (part of the indicator 6.2.1 (Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water) of SDG target 6.2 (By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations)) increased from 60.06 per cent in 2008 to 76.54 per cent in 2017. Romania will be able to reach 100 per cent by 2030 by keeping this speed. In 2017, 51.25 per cent of the population was connected to sewer, 1.58 used septic tanks and 31.73 per cent used improved latrines and other (table 9.11). Open defecation is not in practiced in Romania.

### Table 9.11: Trends in sanitation water service levels, 2012–2017

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved latrine and other</td>
<td>38.6</td>
<td>37.22</td>
<td>35.84</td>
<td>34.46</td>
<td>33.1</td>
<td>31.73</td>
</tr>
<tr>
<td>Septic tank</td>
<td>2.25</td>
<td>2.11</td>
<td>1.98</td>
<td>1.85</td>
<td>1.71</td>
<td>1.58</td>
</tr>
<tr>
<td>Sewer</td>
<td>39.98</td>
<td>42.23</td>
<td>44.49</td>
<td>46.74</td>
<td>48.99</td>
<td>51.25</td>
</tr>
</tbody>
</table>

Source: [https://washdata.org/data/household#!/rou](https://washdata.org/data/household#!/rou)

In 2018, the proportion of domestic and industrial wastewater flows safely treated (indicator 6.3.1 of SDG target 6.3 (By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally)) was 56.71 per cent. In 2017, the proportion of bodies of water with good ambient water quality was 61.37 per cent, of groundwater bodies with good ambient water quality 83.69 per cent and of open water bodies with good ambient water quality was 62.61 per cent.

According to Eurostat, the freshwater abstraction per capita increased from 322.55 m³ per capita in 2012 to 344.22 m³ per capita in 2017. According to the Food and Agriculture Organization of the United Nations, the water use efficiency expressed in US$/m³ was 19.63 US$/m³ in 2008, reached 25.10 US$/m³ in 2016 and decreased to 23.37 US$/m³ in 2017, an increase of 19 per cent (figure 9.4) (indicator 6.3.1 (Proportion of domestic and industrial wastewater flows safely treated) of target 6.4 (by 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity)). In comparison, in 2017, the water use efficiency 129 US$/m³ for Germany, 83.53 US$/m³ for France, 44.33 US$/m³ for the Netherlands. The freshwater withdrawal as a proportion of available freshwater resources measuring the water stress level was 6.8 per cent in 2008 and decreased to 6.3 per cent in 2017.

In terms of degree of integrated water resources management implementation expressed in percentage (indicator 6.5.1 of SDG target 6.5 (By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate)), the score of Romania was 72 over 100 in 2018. The score is divided in four sections: Enabling Environment, Institutions and Participation, Management Instruments, and Financing, for which Romania reported 96, 65, 84 and 44, respectively. The score of the section Institutions and Participation is impacted by the lack of data on gender-specific objectives at sub national levels and Gender-specific objectives and plans at transboundary level. Financing scored low 40. On the indicator 6.5.2 on proportion of transboundary basin area with an operational arrangement for water cooperation, Romania reported 100 per cent of transboundary aquifers and of transboundary basins (river and lake basins and aquifers) with an operational arrangement for water cooperation in 2018 (chapter 6).

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129 [https://ec.europa.eu/eurostat/web/environment/water](https://ec.europa.eu/eurostat/web/environment/water)
Chapter 9: Water management

Figure 9.4: Water Use Efficiency, 2008–2017, US$/m³


On the indicator 6.6.1 (change in the extent of water-related ecosystems over time) of SDG target 6.6 (by 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes), according to the Global Surface Water Explorer extraction for UN Environment, in 2018, is 1.07 per cent of the total area. Table 9.12 shows selected series under indicator 6.6.2.

Table 9.12: Selected series under the global SDG indicator 6.6.2

<table>
<thead>
<tr>
<th>Series</th>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water body extent (permanent) (% of total land area)</td>
<td>2018</td>
<td>1.07</td>
</tr>
<tr>
<td>Nationally derived extent of open water bodies (km²)</td>
<td>2017</td>
<td>2,320.47</td>
</tr>
<tr>
<td>Nationally derived extent of wetlands (km²)</td>
<td>2017</td>
<td>3,156.80</td>
</tr>
<tr>
<td>Nationally derived proportion of water bodies with good quality (%)</td>
<td>2017</td>
<td>61.37</td>
</tr>
<tr>
<td>Nationally derived quality of groundwater (%)</td>
<td>2017</td>
<td>83.69</td>
</tr>
<tr>
<td>Nationally derived quality of open water bodies (%)</td>
<td>2017</td>
<td>62.61</td>
</tr>
<tr>
<td>Nationally derived quality of river (%)</td>
<td>2017</td>
<td>57.37</td>
</tr>
<tr>
<td>Nationally derived quantity of groundwater (millions m³/y)</td>
<td>2017</td>
<td>9,600.00</td>
</tr>
<tr>
<td>Nationally derived quantity of open water bodies (millions m³/y)</td>
<td>2017</td>
<td>475.35</td>
</tr>
<tr>
<td>Nationally derived total extent (km²)</td>
<td>2017</td>
<td>5,477.27</td>
</tr>
<tr>
<td>Nationally derived total quantity (millions m³/y)</td>
<td>2017</td>
<td>10,075.35</td>
</tr>
</tbody>
</table>


Institutional framework

While water management was part of different ministries, its internal institutional structure did not change during the period 2012–2019. Since 2019, after a governmental change, the Ministry of Environment, Waters and Forests is responsible to draft water-related legislation and coordinates water-related concerns (chapter 1).

Romanian Waters drafts water-related regulations, e.g. efficiency of water use and manages sludge. It inspects and manages water quality. It has about 9,500 staff and an annual budget of €265 million.

The National Institute of Hydrology and Water Management conducts studies and gives scientific opinion. At the country level, units are responsible for water management. Some counties have two units, due to their size, with a total staff of around 50. The Institute is also member of the South East Europe Flash Flood Guidance System, which is coordinated by the World Meteorological Organization.

The National Institute for Marine Research and Development “Grigore Antipa”, located in Constanta, is the focal point of the Convention on the Protection of the Black Sea against Pollution, and is member of the Advisory Group of the Black Sea Commission. The Black Sea Commission’s Advisory Group convenes every year, involving experts from all Black Sea countries. The Institute bases its work on the EU Maritime Strategy Framework Directive, which describes obligations to fulfil. The Institute that is financed by the Ministry of Research, has 45 monitoring stations. The Institute co-operates with experts from Bulgaria, Russian Federation,
Turkey and Ukraine. The fact that not all partner countries use the same parameters remains a challenge to be addressed.

The National Meteorological Administration has an active cooperation with media, not only to share meteorological forecasts but also to explain what they mean. For example, in January a traditional annual press conference is organized to give an overview of the previous year and share the threats to sensitive sectors like agriculture and tourism. Similarly, the World Meteorological Day (23 March) gives good opportunity for a deeper insight, following the yearly changing topic that is given by the WMO. The Administration offers daily meteorology data on soil moisture to farmers so they can make plans on when to irrigate. The Administration is also member of the National Committee of Droughts, where information sharing is enhanced. The Administration is the national focal point of the Intergovernmental Panel on Climate Change.

The National Regulatory Authority for Municipal Services of Public Utilities elaborates the methodology for establishing, adjusting or modifying the prices and tariffs for water supply and sewerage services. The Authority carries out the regulation and central monitoring of activities on water services. The Authority is subordinated to the Ministry of Regional Development and Public Administration.

Forty-five Intercommunity Development Associations (IDAs) group local authorities who have delegated their water supply and sanitation services to a public regional operator. Their role is to supervise the performance of the respective public regional operators under the delegated services contracts, as well as approve the regional development plans, which are proposed by public regional operators and include inter alia investment and tariff policies ultimately approved by the National Regulatory Authority for Municipal Services of Public Utilities. Water and sanitation operators set tariffs based on the methodology elaborated by the National Regulatory Authority for Municipal Services of Public Utilities (chapter 3). The tariffs are then checked and approved by local authorities (councils). Each revision is also approved by local councils.

The Recommendation 7.4 in the second EPR of Romania asked the Government to strengthen the institutional capacity of the Intercommunity Development Associations so that they can better exercise their function of supervising regional operators of water supply and wastewater systems. This recommendation is implemented. However, Romania does not report on the SDG target 6.b (Support and strengthen the participation of local communities in improving water and sanitation management).

Commercialization and regionalization of water supply and sanitation services have been the backbone of the reforms in the past decade. According to the World Bank’s report, fragmented municipal operators have been replaced by 43 public regional operators, two large private operators which provide piped water service to 11 million people, or more than 70 per cent of the connected population. Small public municipal operators serve about 1.5 million people. This was achieved by putting in place a new institutional framework in which municipalities delegated water supply and sanitation services to new public regional operating companies.

**Coordination with institutions responsible water management at national, regional and local levels**

Water-related duties are distributed among the organizations at the national and local level. While this can be practical, it can turn negative when administrative institutes that are active in water management hardly have comprehensive information on the recent trends on water quantity, quality, needs, navigation, hydropower, irrigation, even when these issues are obviously interdependent.

**Bilateral and basin-wide cooperation**

Romanian Waters has close cooperation based on bilateral agreements; hence, data exchange is intensive with all neighbouring countries, especially with Serbia, Ukraine and Hungary. Other cooperation is also developing well, for example the European Union Strategy for the Danube Region (box 9.2).
Sustainability is the core principle of the strategy, and hence, regional questions, like enhancement of environmental management are also in the highlight. In the frame of the Strategy, Romania chairs three priority areas: Inland waterways, Culture and Tourism and Environmental risks.

Each year, the incumbent presidency of the Strategy organizes an annual forum to discuss recent macro-regional issues. At the end of June 2019, the event was organised by Romania, thus benefiting by special media attention as the country was holding both the EU Council Presidency and the Strategy Presidency.

The Strategy works based on the “3 NO principles”, i.e. no dedicated funding, no new legislation and no new organizations. However, the project promoters can form consortia and clusters, and access a large variety of funds available at regional, national and transnational level. For example, Romania successfully attracted projects aiming to ameliorate navigation along the Lower Danube sector (e.g. Danube 1, Fast Danube, FAIRway Danube), as well as projects funded by the Danube Transnational Programme, such as Art Nouveau, Connect Green or Danube Floodplain, aiming to valorise the natural and cultural heritage of the region or restore the connectivity of the Danube River with its floodplain (Danube Floodplain), to mitigate the flood risks and restore some of the river ecosystem services.

In Romania there are different joint bodies, which cover the transboundary basin or sub-basins, with all riparian states (Bulgaria, Hungary, Republic of Moldova, Serbia and Ukraine). Each agreement has a secretary of the Joint Commission (usually employee of the Ministry of Waters and Forests), who is responsible for cooperation and ensuring follow-ups to the joint body’s decisions. The bilateral cooperation between neighbouring countries, are different modality to work, taking into account the specific agreements:

- **Bulgaria:** The Joint Commission has four working groups: Working Group for river basin water management; Working Group on Danube; Working Group on Floods; and Working Group on the Black Sea.
- **Hungary:** Bilateral Cooperation develops through the Joint Commission, that meets normally once a year at its session. Each sub Commission has one meeting once year (according to the decisions of Joint Commission).
- **Republic of Moldova:** Bilateral cooperation has a sub-commission on protection against flood and ice, a sub-commission on quantitative water management and hydrometeorology, a sub-commission on water quality protection and water bodies biodiversity, a sub-commission on operation and maintenance of Hydrotechnic Knot Stanca-Costesti on Prut River and an ad-hoc sub-commission.
- **Serbia:** the works are under the sub-commission on protection against floods and ices, sub-commission on water quality protection and sub-commission on hydrometeorology and quantitative management of waters.
- **Ukraine:** bilateral cooperation has three working groups namely, the Working group on Tisa River and its tributaries on the border area; the Working group on Prut and Siret rivers and their tributaries in the border area; and the Working group on Danube River on the common border area.

### 9.10 Assessment, conclusions and recommendations

#### Assessment

Since 2012, Romania has made progress in water management. As EU Member, Romania regularly updates water-relevant legislation based on EU developments. No water strategy bringing all aspects of water management altogether is in place. Thanks to the industry modernization and household water consumption metering, water demand decreased and has remained stable. Ongoing investments in water infrastructure developments do not cover water supply and sewage networks expansion, and renovation of dams.

Concerns remain about the impact of discharges not connected to the sewerage network, pollution from agricultural activities, and population’s limited access to water supply and sanitation systems in rural areas. Main water stress in the Black Sea area is pollution from households due to unmanaged urban sprawl and illegal construction along the coast.

Romania has a long tradition of river basin management. At governmental level, no changes took place after 2012, until in 2019, after a governmental change, the Ministry of Environment, Waters and Forests became responsible to draft water-related legislation and coordinates water-related concerns. A new institutional framework in which municipalities delegated water supply and sanitation services to new public regional operating companies allowed the replacement of municipal operators by regional public operators and large private operators.
The Recommendation 7.1 of the second EPR of Romania is not implemented and remains therefore valid while the implementation of the Recommendation 7.2 is in progress. The implementation of the Recommendation 7.3 is under way. The Recommendation 7.4 is implemented.

Although progress has been achieved, Romania is not on a track to achieve the SDG 6 by 2030, in particular on access to adequate and affordable water supply and sanitation services. Main indicators of targets 6.1, 6.2, 6.3, 6.4, 6.5 and 6.6 have shown an increase. Measurements of indicator 6.5.1 about the implementation of integrated water resources management indicate that the score of Romania was 72 over 100 in 2018. On the indicator 6.5.2 on proportion of transboundary basin area with an operational arrangement for water cooperation, Romania had a high score (100 per cent) of transboundary aquifers and of transboundary basins (river and lake basins and aquifers) with an operational arrangement for water cooperation in 2018. Concerning the SDG target 3.9, indicator 3.9.2, the estimated mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene in Romania was higher of 0.1 deaths per 100,000 population than the European Union average in 2016.

Conclusions and recommendations

Water management strategy

Water management covers various topics such water supply systems and sewage systems, hydropower stations, navigation, floods and drought periods. It involves governmental and non-governmental stakeholders. Water-related issues include also economic and social aspects. No dialogue involving all stakeholder groups is taking place. Information about the current situation is distributed at various levels, for instance, local organizations, including representative groups, non-governmental organizations and environmental institutions, local communities, which would support achieving the SDG target 6.b. No strategy is in place to bring together all water-related aspects, including financing ones.

Recommendation 9.1:
The Government should develop and adopt a comprehensive water management strategy, addressing all water relevant issues, including gender mainstreaming, in a long-term approach, by launching effective dialogues with all relevant groups and organizations to benefit from information about the ongoing situation and suggestions for the future.

Drinking water data

No data on drinking water are available since 2013 when 99.44 per cent of all drinking water analyses were compliant with the Drinking Water Directive. No in-depth analysis was carried out assessing whether all the Directive’s requirements are fulfilled and whether the effects of all newly planned modifications on water body status or potential are assessed at the quality element level. According to the Global Health Observatory, the estimated mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (indicator 3.9.2) was 0.4 deaths per 100,000 Romanian population in 2016. The European Union Average was 0.3 deaths per 100,000 population in the same year.

Recommendation 9.2:
To improve monitoring of global SDG indicator 3.9.2 on the estimated mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene, the Government should ensure that:
(a) Drinking water quality data are collected;
(b) An in-depth analysis is carried out assessing whether all the requirements of the Council Directive 98/83/EC are fulfilled.

Water-related investments

Water demand has decreased since 1990 due to the installation of water meters, increased water prices, use of modern technology in industry and a decline in the water needs of agriculture. The National Institute of Hydrology and Water Management forecasted water demand at 15 million m³ for 2030 under the maximum water use scenario. The medium scenario or environmental scenario forecasted more than double the level in 2017.
According to the National Institute of Statistics, the percentage of population connected to water supply systems increased from 60.23 per cent in 2012 to 69.20 per cent in 2018. At the current pace of growth of coverage with piped water services, Romania will be able to achieve universal access between 2040 and 2050 only. The proportion of population using safely managed drinking water services increased from 81.81 per cent in 2008 to 81.92 per cent in 2017 (target 6.1). By keeping this pace, Romania would reach by 2030 82.07 per cent of the population using safely managed drinking water services.

The present level of connection to sewerage treatment plants leads to the conclusion that the targets for the implementation of the Urban Wastewater Treatment Directive will be difficult to achieve, particularly in rural areas. The proportion of population using safely managed sanitation services increased from 60.06 per cent in 2008 to 76.54 per cent in 2017 (target 6.2). Romania would be able to reach 100 per cent by 2030 by keeping up this rate of progress. In 2018, the proportion of safely treated domestic wastewater flows was 56.71 per cent (target 6.3). In 2017 83.69 per cent of groundwater bodies and 62.61 per cent of surface water bodies were of good quality.

The implementation rate of Romania on integrated water resources management was 72 over 100 in 2018. This low rate is due to the lack of investment (the financing part scored 44 per cent) and the lack of data on gender-specific objectives at sub-national levels and gender-specific objectives and plans at transboundary level (the part on institutions and participation scored 65 per cent). However, Romania reported 100 per cent implementation rate on transboundary water bodies with an operational arrangement for water cooperation.

Recommendation 9.3:
The Government should:

(a) Invest in water infrastructure, such as water supply systems, water pipes, wastewater treatment plants and sanitation networks, in particular in rural areas;
(b) Review the requirements in technical normative documents on industrial wastewater discharges, in order to set wastewater discharge limits for different branches of industry;
(c) Ensure that, when revising river basin management plans, future drinking water needs and water quality objectives are taken into account in order to consider exploring additional water sources such as additional reservoirs.

Sludge management

Only a small amount of sludge is used in agriculture. With the decrease of pollution from industrial wastewater discharges, improved sludge quality is expected. A draft national strategy for the management of sewage sludge is expected to be approved by the Government by end of 2020.

Recommendation 9.4:
The Government should review, adopt and implement the strategy for the management of sewage sludge considering new trends in this area.
Chapter 10

WASTE AND CHEMICALS MANAGEMENT

10.1 Practices and trends in waste management

Waste data

Concerning the system of data collection on waste, well-structured and valid statistical information is expected to be collected when EU compatible methodology will be implemented on all waste streams, through an integrated online system of record keeping. Reporting on waste management by operators is not usually done by appointed and trained persons, based on clear methodology. The lack of an integrated online system of record keeping does not enable crosscheck of data reported (generator vs operator, forwarder – receiver, sharing one data source among institutions, etc.). Such a system is not implemented in Romania.

The Recommendation 8.4 made in the second EPR of Romania, asking the then Ministry of Environment and Forests to ensure that detailed, verified background information is made available for the development of a new integrated waste management strategy for the period 2014–2023, was not implemented as in December 2019.

Municipal solid waste and similar waste

Generation and collection

NEPA collects and manages data on the generation and collection of municipal solid waste (MSW). NEPA collects information reported by different types of companies, e.g., waste generators, companies permitted for waste collection and treatment, and sanitation companies, through on-line questionnaires. NEPA validates, assesses and processes data in accordance to the different reporting obligations. According to NEPA, in 2017, Romania generated 5.3 million tons of MSW in 2017, which is about 272 kg per capita. This number is below the EU 28 average: 487 kg per capita in 2017.

The MSW generated per capita increased from 251 kg in 2012 to 272 kg in 2017 (table 10.1). The share of MSW treated of the MSW generated increased between 2012 and 2017 of 15 per cent and between 2015 and 2016 from 87.4 per cent to 98.9 per cent (table 10.1). Nevertheless, this increase is not followed by the comparable trend of MSW collection coverage rate on national level, which increased of 2 per cent (table 10.2). The population covered by waste collection services continued to steadily increase since 2012. The preliminary data on 2018 indicate that 96 per cent of urban areas and 79 per cent in rural areas were covered by waste collection services. On the national level it represents 88 per cent coverage (table 10.2).

MSW collection and treatment belongs to responsibilities of the local public administration and might be delegated to private companies. According to the National Romanian Regulator for Public Services, there are 336 operators licensed for sanitation services as of 2019. The increase in waste collection coverage and relating tariff remains a challenge. The population was not used paying for their waste collection services. In addition, in rural areas, the waste collection services used to be scarce and the amount of waste was lower than in urban areas. Collection of waste solely from rural area is not economically viable and thus less attractive for operators.

To modernize the municipal waste management system, Romania with the support of EU funds, has been gradually introducing solid waste integrated management systems (SWIMS). These systems are aiming at development and integration of all the elements necessary for functional waste management system, including waste separate collection, transport, transfer, treatment and disposal in a county area. One system typically for one county covers both urban and rural areas aiming at sustainable financial schemes.
i.e., sorting and later material use. Therefore, the total sum of waste that undergo treatment exceeds 100 per cent. Household waste, separately or mixed collected, that is sent to sorting facilities mainly temporary storage. The listed equipment (WEEE) from households and other recyclable waste collected by permitted companies represents only tax in addition to construction and demolition waste also for municipal solid waste disposal (officially called the GEO No. 74/2018 approved by the Law No. 31/2019 introduced measures to move the national municipal Fund Administration a contribution of €10 per each ton of municipal waste that was not collected. Administrative territorial unit which did not organize the public sanitation service, contributes to the Environment Source: NEPA, 2019; Eurostat.

Notes: * NEPA database. ** includes separately collected household waste, as well as waste electrical and electronic equipment (WEEE) from households and other recyclable waste collected by permitted companies. *** represents only household waste, separately or mixed collected, that is sent to sorting facilities. **** mainly temporary storage. The listed ways of treatment include more treatments that waste can undergo, for example some waste undergoes more treatment stages i.e., sorting and later material use. Therefore, the total sum of waste that undergo treatment exceeds 100 per cent. The Government also financially encourages municipalities to organize waste collection services. However, an administrative territorial unit which did not organize the public sanitation service, contributes to the Environment Fund Administration a contribution of €10 per each ton of municipal waste that was not collected.

The GEO No. 74/2018 approved by the Law No. 31/2019 introduced measures to move the national municipal solid waste system closer to integrated principle. One of the stimulating measures is the introduction of a landfill tax in addition to construction and demolition waste also for municipal solid waste disposal (officially called “contribution to circular economy”). Together with the programme on development of SWIMSs in counties it promises further increase in coverage and integration of remote rural areas to waste management system.

To deepen the integration, the National Waste Management Plan (NWMP) for the period 2018–2025 identified additional infrastructure needed. Most of additional capacities are needed in mechanical-biological treatment (970,000 t/y) and anaerobic digestion (mostly represented by biogas plants, with total capacity 821,000 t/y), followed by incineration capacities with energy recovery (173,000 t/y), sorting (52,000 t/y) and composting plants (27,000 t/y). In addition, transformation of waste to secondary raw material for material use or product, it would help create economic value of waste. To do so, waste management system must be economically stimulated to integrate with industries and technologies for utilization of waste materials, cooperating with research and

### Table 10.1: MSW amount per year by treatment, 2012–2017, tons

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total generation*(t)</td>
<td>5,044,121</td>
<td>5,070,805</td>
<td>4,956,075</td>
<td>4,903,535</td>
<td>5,14,2542</td>
<td>5,333,171</td>
</tr>
<tr>
<td>Generated (kg/capita)</td>
<td>251</td>
<td>254</td>
<td>249</td>
<td>247</td>
<td>261</td>
<td>272</td>
</tr>
<tr>
<td>MSW treated (t)</td>
<td>4,261,000</td>
<td>4,270,000</td>
<td>4,338,000</td>
<td>4,288,000</td>
<td>5,079,000</td>
<td>5,306,000</td>
</tr>
<tr>
<td>Treated/generated (%)</td>
<td>84.5</td>
<td>84.2</td>
<td>87.5</td>
<td>87.4</td>
<td>98.9</td>
<td>99.6</td>
</tr>
<tr>
<td>Separately collected per year (t) **</td>
<td>377,510</td>
<td>398,583</td>
<td>412,560</td>
<td>430,305</td>
<td>580,602</td>
<td>688,335</td>
</tr>
<tr>
<td>Separately collected/waste generated (%) **</td>
<td>7.5</td>
<td>7.9</td>
<td>8.3</td>
<td>8.8</td>
<td>11.3</td>
<td>12.9</td>
</tr>
<tr>
<td>Sorted after collection (t)***</td>
<td>639,585</td>
<td>882,501</td>
<td>1,058,255</td>
<td>969,838</td>
<td>1,169,791</td>
<td>1,194,415</td>
</tr>
<tr>
<td>Sorted after collection/MSW generated (%)</td>
<td>12.7</td>
<td>17.4</td>
<td>21.4</td>
<td>19.8</td>
<td>22.7</td>
<td>22.4</td>
</tr>
<tr>
<td>Recycled, composted or prepared for re-use(t)</td>
<td>745,284</td>
<td>670,076</td>
<td>647,536</td>
<td>649,591</td>
<td>689,443</td>
<td>739,384</td>
</tr>
<tr>
<td>Recycling: composting + digestion(t)</td>
<td>165,000</td>
<td>215,000</td>
<td>256,000</td>
<td>284,000</td>
<td>331,000</td>
<td>387,000</td>
</tr>
<tr>
<td>Recycled, composted or prepared for re-use/waste generated (%)</td>
<td>3.3</td>
<td>3.2</td>
<td>3.1</td>
<td>3.2</td>
<td>3.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Recycling: material/waste generated (%)</td>
<td>3.1</td>
<td>3.2</td>
<td>3.3</td>
<td>3.4</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Recycling: composting + digestion/waste generated (%)</td>
<td>11.5</td>
<td>9.0</td>
<td>7.9</td>
<td>7.4</td>
<td>6.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Recovery: co-incineration (t)</td>
<td>88,776</td>
<td>97,368</td>
<td>132,601</td>
<td>116,296</td>
<td>219,608</td>
<td>227,280</td>
</tr>
<tr>
<td>Recovery: co-incineration/waste generated (%)</td>
<td>1.8</td>
<td>1.9</td>
<td>2.7</td>
<td>2.4</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Disposal: compliant landfills (t)</td>
<td>2,811,443</td>
<td>3,052,872</td>
<td>3,052,966</td>
<td>3,096,145</td>
<td>3,330,021</td>
<td>3,717,951</td>
</tr>
<tr>
<td>Disposal: compliant landfills/waste generated (%)</td>
<td>55.7</td>
<td>60.2</td>
<td>61.6</td>
<td>63.1</td>
<td>64.8</td>
<td>69.7</td>
</tr>
<tr>
<td>Disposal: non-compliant landfills (t)</td>
<td>615,204</td>
<td>449,641</td>
<td>540,661</td>
<td>426,181</td>
<td>237,488</td>
<td>519,126</td>
</tr>
<tr>
<td>Disposal: non-compliant landfills/waste generated (%)</td>
<td>12.2</td>
<td>8.9</td>
<td>10.9</td>
<td>8.7</td>
<td>4.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Other disposal ****(t)</td>
<td>97,780</td>
<td>435,038</td>
<td>348,098</td>
<td>302,629</td>
<td>498,124</td>
<td>534,172</td>
</tr>
<tr>
<td>Other disposal****/waste generated (%)</td>
<td>1.9</td>
<td>8.6</td>
<td>7.0</td>
<td>6.2</td>
<td>9.7</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Source: NEPA, 2019; Eurostat.

### Table 10.2: Population covered by waste collection services, 2012–2018, per cent

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban areas</td>
<td>87.00</td>
<td>88.98</td>
<td>92.26</td>
<td>93.67</td>
<td>94.50</td>
<td>95.90</td>
</tr>
<tr>
<td>Rural areas</td>
<td>60.44</td>
<td>66.80</td>
<td>69.12</td>
<td>71.79</td>
<td>75.10</td>
<td>79.15</td>
</tr>
<tr>
<td>National coverage</td>
<td>75.04</td>
<td>69.12</td>
<td>87.00</td>
<td>2012</td>
<td>78.96</td>
<td>66.80</td>
</tr>
</tbody>
</table>

Source: NEPA, 2019.
development sectors. Creating value of waste would also improve the economic balance of waste collection from rural areas.

**Separation and sorting**

The separate collection of recyclables from MSW remains low, reaching 12.9 per cent of the total MSW generated in 2017 (table 10.1). In 2018, the most separately collected was biodegradable waste with 107 000 tons followed by the paper and cardboard with 64,000 t and plastic waste (figure 10.1). Another possibility how to separate recyclables from MSW in Romania is sorting of mixed waste after its collection. In 2017, 22.5 per cent of MSW collected underwent sorting, while in 2012 it was 15 per cent. Comparison of data on share of MSW separately collected and sorted after collection (in 2017: 13.1 + 22.5 = 35.6 per cent) with data on MSW recycled, composted or prepared for re-use (2017: 13.9 per cent) would indicate relatively low yield of recyclables (40 per cent) from separately collected/sorted waste. The low separation rate of the recyclables was noted by the EU and the country is at risk of missing the 2020 target of 50 per cent preparation for re-use/recycling of MSW. Capacities of facilities needed in addition to existing as listed in the NWMP is 52,000 t/y.

**Figure 10.1: Waste collected separately by sanitation operators, 2018, t**

![Figure 10.1: Waste collected separately by sanitation operators, 2018, t](image)

*Source: NEPA, 2019.*

The current low MSW separate collection/sorting and recycling rate is not a nationwide pattern. Some counties have SWIMSSs in place (box 10.1). The issue originates from the beginning of the national waste management system transformation to EU standards. Great efforts to introduce the SWIMSSs has been made, covering rural and urban areas, for each county one SWIMS with some exemptions. With the support of EU funds, the SWIMS projects implementation started in 2007 and since then 32 of the 42 counties have taken part to process. By 2019 up-to 20 SWIMS were fully functional and successfully operated. Remaining municipalities outsource sanitation services, which result in longer transportation distances and higher costs. The GEO No. 74/2018 allows municipalities a possibility to amend the contracts by introducing performance indicators for waste collecting companies in order to increase the rate of separate collection (40 per cent) of recyclable waste and meet the recycling goals by 2020 and beyond. Penalties for not fulfilling the targets were also introduced.

**Box 10.1: SWIMS in Pitest County**

The SWIMS in Pitest County is an example of good practice. The system of waste management facilities and services for the whole county is operated by one company, the MSW collection is provided by other three different companies. The SWIMS facility includes composting plant, mechanical biological treatment, sorting line, construction and demolition waste shredder, compliant landfill with gas-collection system to produce energy, wastewater treatment plant, all operated according to national standards.

The SWIMS is servicing also the commercial sector. All the separately collected/sorted outlets are contracted with recycling companies. These include more than 10 items, such as paper, cardboard, various plastics, metals, glass, refuse-derived fuel, compost, wood.
Part III: Media and pollution management

For benchmarking the national performance against the global indicator 12.5.1 (national recycling rate, tons of material recycled) of the target 12.5 (by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse), the latest publicly available data are from 2016. In 2016, the country reached 30 per cent on the EU indicator (Recycling rate of waste excluding major mineral wastes) (EU 27 average was 56 per cent), which is a 2-percentage point increase in comparison with 2012 (EU-27 54 per cent). The most “recycling” is the manufacturing sector (estimated at 63 per cent as of 2017 including the secondary waste), while municipal sector reached only 13.9 per cent in 2017 (EU 2020 target: 50 per cent municipal waste prepared for re-use/recycling).

Romania has endorsed EU policy framework with the key principles of waste prevention, recycling and reuse. The country has developed specific programmes and co-financed substantial funds from the EU dedicated to these programmes to approach the target 12.5: a) the Sectorial Operational Programme 2007–2013, Priority Axis 2 “Development of integrated waste management systems and rehabilitation of historically contaminated sites” and b) Programme “Large Infrastructure Operational Programme 2014–2020 Priority Axis 3 - Development of environmental infrastructure under efficient resources management conditions”.

The country has developed administrative support to facilitate these programmes, though with low results. The country has been also implementing monetary measures, including a penalty €10 per each ton of recyclable waste that is not diverted from landfill. In addition, municipalities struggle with availability of qualified personnel capacities. The same applies to environmental institutions. Governmental awareness is not risen systematically.

Despite some measures implemented and with still incomplete basic waste management infrastructure Romania is at the beginning of its way to the sustainable consumption. On one hand the purchasing power of rural areas is low, as reflected in low consumption and waste low generation rate. On the other hand, Romania economic power rely too much on primary resources and the amount of primary resources needed for generation of GDP is one of the highest in the EU. While some EU countries are landfilling a smart part of their waste, Romania is catching up with the rehabilitation of non-compliant landfills and construction on new compliant landfills.

Most worrying is the low environmental technology demand which is caused by the absence of waste disposal discouraging measures such as landfill tax. Its introduction would reduce waste generation and divert waste from landfills to material recovery facilities. According to the EU waste legislation implementation Report, Romania was at risk of missing the 2020 municipal waste reuse/recycling target of 50 per cent.\(^{130}\)

**Landfilling**

As of 2019 all MSW is deposited in compliant landfills. According to NEPA, in 2017 approximately 3.7 million tons (70 per cent) of MSW was disposed on compliant landfills, and only 52,000 t (1 per cent) was disposed on non-compliant landfills (table 10.1), which is a decrease of 11 per cent compared to 2012. The share of waste disposed in other ways (mostly stored) has increased of 8 per cent to 10 per cent in 2017.

There are 16 storage facilities for temporary waste storage in the country. Temporary storage is generally allowed for one year prior to disposal and three years prior to recovery, during which the owner can test how to treat it in order to follow waste hierarchy. After that period and only if there is no other possibility of utilization, the owner of the temporary storage can dispose the waste. In case of MSW and with respect to the predominant way of its treatment in Romania, most of the stored waste is most likely to be disposed to a landfill. The percentage of amount of waste landfilled increased from 68.8 per cent in 2012 to 80.7 per cent in 2017.

By December 2019, Romania closed 213 out of a total of 240 non-compliant landfills to the Landfill Directive, through European funds and national budget. For the 27 remaining non-compliant landfills, the Environment Fund will support the closure-rehabilitation costs for 10 of them and the European funds and/or national budget will cover the closure-rehabilitation costs for 17 others.

Romania is facing challenges in securing the capacities for sustainable MSW disposal in the future, rehabilitation of closed non-compliant landfills and efforts to introduce viable economic schemes for landfill tariff setting. In addition, some facilities, including newly constructed SWIMS landfills, are left with a limited maintenance,

because some tenders for a sanitation service operator on municipal level had been repeatedly delayed as competing parties appealed in courts against the decision made within the tender. As a result, this could give operators the arguments that they cannot guarantee compliant performance of such facilities.

According to NEPA in 2018, Bucharest generated 0.75 million tons of MSW and disposed it on one of the three of landfills servicing Bucharest while the Ministry of Environment, Waters and Forests estimates that Bucharest generates annually approximately 1–1.1 million tons of waste. The environmental permit of the landfill “Ecorec Glinahas has expired in February 2019 for non-compliance while the other two landfills (Chiajna-Rudenei and Vidra) with environmental permit have only an extra capacity of 4.2 million m³ (i.e. 3-year capacity – provided the density of waste is 0.5 t/m³ and the landfills receive 0.75 million tons of municipal waste only from Bucharest).

In fact, landfills also receive waste from Ilfov County. As a result, Bucharest is facing an issue with waste disposal capacities. Bucharest has not yet implemented the SWIMS and did not invest in waste management infrastructure. Originally an intended waste incineration station was expected to be built in Bucharest, but due to urbanistic issues (improper urbanistic setting for the plant) the project is postponed. The waste incineration station, in the 2019 country context, was considered a realistic solution for the town waste management.

Romania has improved its municipal solid waste management since its EU accession. In 2018 95.6 per cent of urban areas were covered by waste collection. In Bucharest waste collection rate reached 100 per cent of which 18 per cent was sent to sorting facilities, while separate collection of recyclables at source is only now emerging.

Cities also produce substantial amount of sewage sludge from the treatment of wastewater. In 2018, the Bucharest wastewater treatment plant generated 31,000 tons of dry matter which corresponds to approximately 155,000 tons of sludge. All the sludge received treatment (anaerobic digestion) and more than 90 per cent of sludge was used as a fertilizer after the treatment.

According to the Ministry of Environment, Waters and Forests, all the municipal solid waste collected in Romania and designated for disposal is landfilled on compliant landfills. Though, there were numerous complaints in 2018 from citizens addressed to the European Parliament on air pollution from Chiajna-Rudenei landfill serving mainly the northern and western part of Bucharest. This had been referred to as long-lasting issue from petitioners.

Under the SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable), countries are aiming to reduce the adverse per capita environmental impact of cities. The National Institute of Statistics does not collect data on the global indicator 11.6.1 (Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities) of target 11.6 (by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management). This indicator is expected to be collected. However, in the context of the monitoring the implementation of the 2008 first National Sustainable Development Strategy - Horizons 2013–2020–2030 (chapter 1), the National Institute of Statistics used to collect data on amount of household waste collected per inhabitant by counties.

Manufacturing waste

Generators of manufacturing waste are responsible to manage waste on their own or through another company, in both cases according to the environmental permit for waste collection or treatment. Manufacturing sector annually generates approximately 7 million tons of waste. The two sub-sectors; manufacture of wood and of products of wood and cork, and manufacture of basic metals and fabricated metal products together generated almost 60 per cent of the total manufacturing waste between 2012 and 2016. These are followed by manufacture of chemical, pharmaceutical, rubber and plastic products (12 per cent); manufacture of food products (8 per cent); computer and electronics (7 per cent); and agriculture (6 per cent).

NEPA provides data for the indicator “treatment, recycling and re-use”, which also includes the secondary waste resulting from treatment of waste. This is followed by the co-incineration (energy recovery) and disposal on compliant landfill/surface impoundment (table 10.3). Differences between the amount of waste generated vs waste treated and disposed come from the amount of waste that is stored each year at the place of generation prior to its treatment and disposal. The allowed period that the industrial waste can be stored prior to its disposal is one year and three years prior to recovery.
### Table 10.3: Manufacturing waste treatment per activity, 2012–2018, t

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total generated</td>
<td>6,029,400</td>
<td>6,931,698</td>
<td>6,744,598</td>
<td>7,268,925</td>
<td>7,793,777</td>
<td>6,516,576</td>
<td>6,847,387</td>
</tr>
<tr>
<td>Treated, recycled and re-used **</td>
<td>4,282,534</td>
<td>4,093,583</td>
<td>3,984,147</td>
<td>3,891,135</td>
<td>4,174,648</td>
<td>4,119,311</td>
<td>3,990,809</td>
</tr>
<tr>
<td>Co-incineration</td>
<td>1,409,407</td>
<td>1,400,413</td>
<td>1,934,052</td>
<td>1,981,204</td>
<td>1,779,369</td>
<td>1,508,232</td>
<td>1,710,593</td>
</tr>
<tr>
<td>Share on total generated (%)</td>
<td>23.4</td>
<td>20.2</td>
<td>28.7</td>
<td>27.3</td>
<td>22.8</td>
<td>23.1</td>
<td>25.0</td>
</tr>
<tr>
<td>Compliant landfills</td>
<td>684,081</td>
<td>652,398</td>
<td>778,626</td>
<td>745,971</td>
<td>722,143</td>
<td>719,427</td>
<td>465,809</td>
</tr>
<tr>
<td>Share on total generated (%)</td>
<td>11.3</td>
<td>9.4</td>
<td>11.5</td>
<td>10.3</td>
<td>9.3</td>
<td>11.0</td>
<td>6.8</td>
</tr>
<tr>
<td>Surface impoundment ***</td>
<td>547,323</td>
<td>542,758</td>
<td>555,029</td>
<td>611,986</td>
<td>585,881</td>
<td>605,460</td>
<td>600,623</td>
</tr>
<tr>
<td>Share on total generated (%)</td>
<td>9.1</td>
<td>7.8</td>
<td>8.2</td>
<td>8.4</td>
<td>7.5</td>
<td>9.3</td>
<td>8.8</td>
</tr>
<tr>
<td>Incineration on land</td>
<td>159,787</td>
<td>35,255</td>
<td>44,810</td>
<td>50,401</td>
<td>50,334</td>
<td>58,938</td>
<td>60,932</td>
</tr>
<tr>
<td>Share on total generated (%)</td>
<td>2.7</td>
<td>0.5</td>
<td>0.7</td>
<td>0.7</td>
<td>0.6</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Source: NEPA, 2019.

Notes: * Preliminary data. ** Includes also secondary waste from waste collection / treatment activities that are recovered by manufacturing industry, *** Surface impoundment, e.g., placement of liquid or sludgy discards into pits, ponds or lagoons.

Co-incineration is well established in Romania since all cement factories have invested in specific technologies and have been authorised for the co-incineration of a wide range of wastes. This is a key advantage that gives a potential for more sustainable schemes of waste management like energy and material use, processing of wastes. In 2016 the total capacity of energy use waste management installations in Romania was 6.2 million tons compared to 7 million tons of manufacturing waste generated annually.

The disposal of industrial waste on compliant landfills and impoundments is organized in a way that manufacturing companies usually operate their own compliant waste management facility for hazardous waste and non-hazardous waste. There is no more non-compliant industrial landfill in the country in operation. Although 47 non-compliant industrial sites are under infringement procedure with EU, these are not in operation, awaiting remediation or rehabilitation. The share of companies with a foreign capital licensed for waste management operations in Romania is very low, up to three companies.

**Waste from energy sector**

Energy sector waste characteristics is primarily driven by the energy mix of the country: 23 per cent of energy is generated by coal combusting plants, 16 per cent by combustion of hydrocarbons and the remaining by renewable sources and nuclear power. Coal combusting plants generally generate substantial amount of combustion wastes of various quality, which can be utilized depending on the combustion technology. Thus, slag and ash create usually 20 to 30 per cent of the input in case of high temperature combustion technology and gypsum products can form 20 per cent.

Only a small amount of Romanian energy sector waste is recovered: 7.2 per cent and 9.4 per cent was recycled and backfilled in 2012 and 2016, respectively. Landfilling the energy sector waste is a dominant treatment in Romania, with more than 90 per cent share in 2016 (table 10.4). The main reasons are the lack of landfilling tax, the lack of end-of-waste criteria implementation and the lack of required legal framework and technical standards for end-of-waste and product criteria. This situation and the potential misuse of the end-of-waste criteria hampers the opportunity to use the potential energy by-products in construction industry, or as material for rehabilitation of e.g. waste disposal sites.

### Table 10.4: Treatment of combustion wastes, 2012, 2014 and 2016, tons

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste treatment</td>
<td>9,361,909</td>
<td>7,195,789</td>
<td>7,036,126</td>
</tr>
<tr>
<td>Disposal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill (D1, D5, D12)</td>
<td>8,685,485</td>
<td>6,616,269</td>
<td>6,371,576</td>
</tr>
<tr>
<td>Incineration (D10)</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Recovery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycling</td>
<td>676,361</td>
<td>563,729</td>
<td>656,587</td>
</tr>
<tr>
<td>Backfilling</td>
<td>61</td>
<td>15,791</td>
<td>7,963</td>
</tr>
</tbody>
</table>

Source: Eurostat, 2019
Chapter 10: Waste and chemical management

Note: D1: Deposit into/onto land, e.g. landfill. D5: Specially engineered landfill, e.g. placement into lined discrete cells which are capped and isolated from one another and the environment. D10: Incineration on land. D12: Permanent storage, e.g. emplacement of containers in a mine

Construction and demolition waste

The construction and demolition waste is usually the most abundant waste stream on national level competing with the mining sector. The recent trend in construction and demolition waste generation was rather stable with excessive drop between 2016 and 2017 from 1.3 to 0.7 million tons (table 10.5). Recycling rates increased from 2012 to 2016, in 2017 reaching 73 per cent.

Table 10.5: Construction and demolition waste, 2012–2017, tons

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td>1,328,097</td>
<td>1,231,850</td>
<td>1,059,947</td>
<td>1,072,109</td>
<td>1,294,665</td>
<td>703,277</td>
</tr>
<tr>
<td>Recycling</td>
<td>339,218</td>
<td>483,227</td>
<td>479,151</td>
<td>476,976</td>
<td>737,100</td>
<td>398,919</td>
</tr>
<tr>
<td>Backfilling</td>
<td>145,672</td>
<td>147,407</td>
<td>146,499</td>
<td>158,185</td>
<td>220,686</td>
<td>116,055</td>
</tr>
<tr>
<td>Disposed on compliant landfills</td>
<td>257,470</td>
<td>135,641</td>
<td>232,799</td>
<td>133,497</td>
<td>173,290</td>
<td>40,472</td>
</tr>
</tbody>
</table>

Source NEPA, 2019.

Nevertheless, data from NEPA on generation and treatment in comparison with Eurostat data differ significantly in most of the recycling and backfilling items, indicating noncompliance with classification of recycling and backfilling. For comparison with NEPA, the Eurostat data for 2016 present that 560,000 t of construction and demolition waste was recycled, 420,000 t backfilled and 173,000 t was landfilled. The difference between the amount of waste generated and treated indicates waste dumping. The amount of waste generated is only an estimate, based on reports of municipalities, waste collecting operators and disposal operators. Construction and demolition companies are not obliged to report on amount and treatment of construction waste generated by their activities. It is the obligation of the owner of the construction and demolition permit.

Despite the recycling target (70 per cent of construction and demolition waste generated to be recycled in 2020), Romania had not introduced specific legislation on construction and demolition waste management to facilitate its separate collection, treatment and use as at December 2019. Some regulations are in place on general waste management principles affecting the construction and demolition waste including general obligation to recycle and recover; construction permit process; and construction and demolition waste within the NWMP and others.

The GEO No. 74/2018 introduced the construction and demolition waste disposal tax. This breakthrough instrument must, nevertheless, be accompanied by enforcement measures to avoid an increased ratio of construction and demolition waste illegally dumped. Part of the construction and demolition waste is mismanaged because there are almost no capacities left for its due disposal.

However, there are examples of good practice. For example, waste management operators of SWIMSs run the system including the construction and demolition waste collection, recycling and utilization for commercial purposes.

Mining and quarrying waste

The yearly amounts of mining and quarrying waste vary between 150 million tons and 225 million tons, which makes it, by far, the major waste generating sector in Romania with 85–90 per cent of the national total in the period 2012–2017. The reason for the fluctuation in annual amounts is probably caused by inconsistent waste reporting practices. Most mining and quarrying waste is disposed on compliant landfills (96.6–98.7 per cent), followed by the disposal on impoundments (0.9–1.7 per cent) (table 10.6).

All the mining waste management facilities must have the mining waste management plan approved by the competent authority. The waste installations are also subject to waste facility hazard classification. For the “A category” facilities the safety management system and internal emergency plan must be prepared, the external emergency plan should be prepared by the competent authority. Also, different category waste management facilities may be operated only by a competent person, under the conditions of permit issued by the competent authority. The Directive 2006/21/EC on the management of waste from the extractive industries also stipulates
conditions for mining waste facility closure and after-closure procedures. Environmental protection preventive measures must be taken. The start of the mining waste processing operation in Romania is conditioned by the guarantee to be paid by the operator. The aim of the guarantee is to have all measures stemming from the environmental permit financially secured and that funds for the rehabilitation of waste management site are available. Relevant institutional plans reflect progress in the mining waste sector through evaluation of relating objectives and targets set, e.g. the target to increase the share of operations that meet international operating standards/closure plans to over 50 per cent in 2022.

<table>
<thead>
<tr>
<th>Table 10.6: Mining and quarrying waste, 2012–2017, tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
</tr>
<tr>
<td>2012: 223,292,739</td>
</tr>
<tr>
<td>2013: 218,894,151</td>
</tr>
<tr>
<td>2014: 152,783,565</td>
</tr>
<tr>
<td>2015: 154,649,656</td>
</tr>
<tr>
<td>2016: 153,917,820</td>
</tr>
<tr>
<td>2017: 204,434,984</td>
</tr>
<tr>
<td>Disposed on compliant landfills</td>
</tr>
<tr>
<td>2012: 220,155,607</td>
</tr>
<tr>
<td>2013: 216,139,439</td>
</tr>
<tr>
<td>2014: 147,554,456</td>
</tr>
<tr>
<td>2015: 150,833,685</td>
</tr>
<tr>
<td>2016: 151,074,066</td>
</tr>
<tr>
<td>2017: 201,014,900</td>
</tr>
<tr>
<td>Share on the total generated (%)</td>
</tr>
<tr>
<td>2012: 98.6</td>
</tr>
<tr>
<td>2013: 98.7</td>
</tr>
<tr>
<td>2014: 96.6</td>
</tr>
<tr>
<td>2015: 97.5</td>
</tr>
<tr>
<td>2016: 98.2</td>
</tr>
<tr>
<td>2017: 98.3</td>
</tr>
<tr>
<td>Surface impoundment</td>
</tr>
<tr>
<td>2012: 2,316,731</td>
</tr>
<tr>
<td>2013: 2,066,476</td>
</tr>
<tr>
<td>2014: 2,357,981</td>
</tr>
<tr>
<td>2015: 2,650,997</td>
</tr>
<tr>
<td>2016: 2,602,209</td>
</tr>
<tr>
<td>2017: 2,663,320</td>
</tr>
<tr>
<td>Share on the total generated (%)</td>
</tr>
<tr>
<td>2012: 1.0</td>
</tr>
<tr>
<td>2013: 0.9</td>
</tr>
<tr>
<td>2014: 1.5</td>
</tr>
<tr>
<td>2015: 1.7</td>
</tr>
<tr>
<td>2016: 1.7</td>
</tr>
<tr>
<td>2017: 1.3</td>
</tr>
<tr>
<td>Source: NEPA, 2019.</td>
</tr>
</tbody>
</table>

Romania is also facing a challenge in conservation and closure of economically inefficient mines, which started in 1998 and will continue up to the closure of all 556 mines covered by programme. The Ministry of Economy reports in the Institutional Strategic Plan (2019–2022) that no progress was registered in this respect and the associated activities encountering series of obstacles are in progress. Romania missed the 2018 targets on remediation of contaminated sites that were inventoried and was fined due to the failure to restore the Bosneag pond (chapter 1).

**Agricultural waste**

Every two years the National Institute of Statistics carries out survey on statistical data on agricultural waste. The analysis based on 2014 and earlier data of reporting revealed deficiencies in the reporting system. The country, therefore, set a target to improve the data reporting system for both the generation and management of agricultural, forestry and fishery waste by 2018 (data for 2018 will only be available in 2020).

Data available show that the vegetal waste formed 95 per cent of the total waste generated by the sector in 2016. Waste treatment in agriculture must be carried out in waste recovery or disposal facilities, in accordance with the legal provisions in force, for organic wastes preferably through biogas plants and composting (material use). Nevertheless, the NEPA reporting format of data does not disaggregate the recovery item. In 2016 out of 730,000 t of animal and vegetal waste treated in Romania 580,000 (80 per cent) was subject to material use; 10 per cent to energy recovery, 4 per cent incinerated and the rest 6 per cent was landfilled. Amount of agricultural waste used has increased steeply by 80 per cent from 2012 to 2016. Even such a steep increase did not lead to meet the 2013 national target of 50 per cent biodegradable waste to become subject to material or energy recovery through the aerobic and anaerobic processes. Romania has not yet set new target on biodegradable waste.

**Hazardous waste**

Hazardous waste represented 0.35 per cent of the total waste generated in 2016 (later official data on total waste generation was not available as of 2019). In 2018 Romania generated 556,000 t of hazardous waste (figure 10.2), which was 32 kg per capita and year - the EU 28 average was 197 kg per capita. The low share of hazardous waste reflects the structure of the national economy rather than the state-of-the-art production technologies or substantial reduction of hazardous properties or hazardous components separation. NEPA estimated that in 2017 hazardous waste generating sectors were the mining industry (53 per cent); manufacturing of basic metals and fabricated metal products (27 per cent); followed by service sector (14 per cent); and households; manufacturing of electrical and electronic products, vehicles; and manufacture of coke and refined petroleum products (6 per cent).

Between 2012 and 2018 the share of treated hazardous waste in waste management installations fluctuated between 56 and 86 per cent of total generated hazardous waste, without increasing trend. The gap in treatment
could be explained if part of the waste disposed on compliant landfills would not receive treatment prior to landfilling as defined by the Landfill Directive. Hazardous waste is part of MSW, but in Romania, because of the lack of separate collection schemes, it is not a practice to separate it, except for batteries, accumulators and electrical equipment.

![Figure 10.2: Hazardous waste, 2012–2018, t](image)

Source: NEPA, 2019.

According to United Nations Statistics Division, Romania generated 34.17 kg per capita of hazardous waste in 2012 and 31.57 in 2016. In 2016, the proportion of hazardous waste incinerated was about 12.62 per cent of treated hazardous waste, 52.80 per cent are landfilled and 34.58 per cent is recycled. These data cover the indicator 12.4.2 ((a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment) of target 12.4 (by 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment).

Operation of all non-compliant hazardous waste landfills was ceased years ago. Sites are waiting for rehabilitation or remediation. Hazardous waste landfills and impoundments in function are compliant with their environmental permit.

Although the amount of hazardous waste generated per capita is low (16 per cent of the EU average in 2017), only 71 per cent received treatment. Also, a substantial part of hazardous waste from the municipal sector has been disposed on landfills, ends up in sewage system or in the environment instead of being separately collected and duly treated. Only 57 per cent per cent of wastewater from households received treatment in 2017. The 2018 state of the environment report states hundreds of confirmed old mining objects, industrial and waste disposal sites causing air, water or soil contamination. Still in 2019 the management of waste containing PCBs lacked the dedicated institutional capacity and did not fully comply with the international practices.

The European policy framework on waste management adopted by Romania is enabling significant improvements to reach the EU 2020 target. Nevertheless, Romania have not yet completed implementation of environmental and human health protection measures. The beginning of the product cycle is organized according to international standards. The storage of chemicals and disposal of waste chemicals from industrial sector is organized in compliance with environmental permits.

The SDS 2030 sets national goals e.g. to implement the separate collection of household hazardous waste by 2022. However, companies are not motivated to treat more of the hazardous waste or apply the best available waste treatment techniques to reduce the impact on human health and environment. Despite the number of dedicated programmes launched, the improvement of the hazardous waste management system is slow. For all its commitments the country does not have enough human and financial resources.

No motivating measures to reduce the environmental and human health impact of the disposal of the product life circle via indorsement of BATs were introduced. Robust motivating instruments in Romania to increase treatment of hazardous waste and minimising its generation, apart from focusing on the end-of-pipe solution, are missing.
A landfill tax and a hazardous waste disposal tax are not in place to motivate industries to implement best available production technologies and techniques to treat the waste. There are no schemes, nor the infrastructure developed to enable disposal of the hazardous components of municipal waste such as waste chemicals, paints, oils, batteries, or sharps.

**Medical waste**

Each county and Bucharest have public health departments, which oversee the practice in medical waste in hospitals, medical centres, dentist operations and other medical units. Hospitals have an authorised coordinator for a proper medical waste management to elaborate the internal medical waste management plan. According to the methodology on medical waste data collection, the coordinator reports on medical waste generated, on its management, incidents/accidents linked to medical staff involved in handling of healthcare waste. The key implemented principle related to waste management is to separate the hazardous and other waste streams and divert hazardous waste from landfills (table 10.7).

<table>
<thead>
<tr>
<th>Table 10.7: Healthcare waste, 2012–2018, tons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public and private sanitary units with and without beds</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2012</td>
</tr>
<tr>
<td>2013*</td>
</tr>
<tr>
<td>2014</td>
</tr>
<tr>
<td>2015</td>
</tr>
<tr>
<td>2016</td>
</tr>
<tr>
<td>2017</td>
</tr>
<tr>
<td>2018</td>
</tr>
</tbody>
</table>

*Note: * Since 2013, the new legislation and the new methodology for data collection and processing had been implemented according to the MO No. 1226/2012 on healthcare waste management. **estimate.

The treatment capacity of hazardous medical waste is sufficient both on national and county levels. The equipment includes: 11 hazardous waste incineration stations; 14 infectious waste treatment stations; 23 small-sized capacity sterilization equipment. Medical waste after sterilization (obligatory) can be disposed-off on non-hazardous waste landfill. The expired drugs are collected by local pharmacies and disposed via incineration.

Incidents with healthcare waste or drugs disposal out of health care units have been recorded in 2016. When such an incident happens, the institutions involved are the respective county public health department, NEG (through LEGs) and Inspectorate for Emergency Situations and take action to mitigate the impact and issue warning to relevant institutions/public.

**Radioactive waste**

The major radioactive waste management facilities in operation include the Nuclear Power Plant Cernavoda, the Nuclear Fuel Plant in Pitesti, nuclear research institutions and uranium mining and milling industry including those rehabilitated or awaiting rehabilitation (table 10.8). In addition to the major sources of radioactive waste there are also minor sources i.e. health care related and industrial facilities.

To improve the management and sustainability of radioactive waste management and decommissioning activities, the radioactive waste generators contribute to the two earmarked funds. The amount of the contribution should enable full coverage of radioactive waste management and decommissioning activities. Nevertheless, the amount of the contribution, determined in 2011, deserves revision. Studies have been done on the level of the costs, but Romania has still not revised the financial contribution.

There are plans to extend the capacity of some radioactive waste management facilities. Competent authorities are striving to obtain the siting license for the new near-surface Low and Intermediate Level Waste repository which is planned to be opened in 2023. The closure of the first part of Cetatuia II tailing pond remains a challenge; the rehabilitation of rock dumpsites is only partially addressed.
### Table 10.8: Radioactive waste management facilities

<table>
<thead>
<tr>
<th>Waste management operation</th>
<th>Waste management facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-treatment and storage of NPP solid operational waste, except spent resins</td>
<td>Nuclear Power Plant Cernavoda</td>
</tr>
<tr>
<td>Organic liquid pre-treatment and storage</td>
<td></td>
</tr>
<tr>
<td>Storage of NPP spent resins</td>
<td></td>
</tr>
<tr>
<td>Gaseous filtering and airborne releasing</td>
<td></td>
</tr>
<tr>
<td>Aqueous liquid decontamination and environment discharging</td>
<td></td>
</tr>
<tr>
<td>Gaseous filtering and airborne releasing</td>
<td>Nuclear Fuel Plant Pitesti</td>
</tr>
<tr>
<td>Storage of liquid waste and liquid effluents</td>
<td></td>
</tr>
<tr>
<td>Storage of solid radioactive waste low contaminated (only natural uranium). There are two categories: combustible and non-combustible</td>
<td></td>
</tr>
<tr>
<td>Treatment + conditioning of waste generated at ICN Pitesti and FCN Pitesti</td>
<td>Nuclear research institutes</td>
</tr>
<tr>
<td>Recovery of Uranium from waste generated at FCN Pitesti</td>
<td>RATEN/ICN-Pitesti</td>
</tr>
<tr>
<td>Storage of HLW and LILW-LL</td>
<td></td>
</tr>
<tr>
<td>Treatment, conditioning and storage of non-fuel cycle radioactive waste</td>
<td>IFIN-HH-Magurele</td>
</tr>
<tr>
<td>Disposal of the non-fuel cycle radioactive waste</td>
<td>IFIN-HH-Baita-Bihor</td>
</tr>
<tr>
<td>Settling and storing of radioactive tailings resulted from milling process</td>
<td>Uranium mining and milling</td>
</tr>
<tr>
<td>Final settling of fines tailings</td>
<td>CNU – Feldioara</td>
</tr>
<tr>
<td>Storage of low activity solid waste</td>
<td></td>
</tr>
<tr>
<td>Storage and environment rehabilitation/ remediation of sterile and radioactive rocks</td>
<td>CNU-Suceava</td>
</tr>
<tr>
<td>Storage and environment rehabilitation/ remediation of sterile and radioactive rocks</td>
<td>CNU-Stei (Bihor)</td>
</tr>
<tr>
<td>Dumps resulted from research and uranium mining activities</td>
<td>CNU-Oravita (Banat)</td>
</tr>
</tbody>
</table>

**Source:** National Commission for Nuclear Activities Control, 2017.


One of the key aspects of safe management of radioactive waste is qualified staff. Despite the need, the key institutions in the country are facing the shortage of qualified personnel e.g. Nuclear Agency and for Radioactive Waste, National Commission for Nuclear Activities Control has 62 vacancies. This pose increased the risk to future radioactive waste management.

**Persistent organic pollutants waste**

Disposal of the obsolete pesticide stocks of 2,516 tons from 218 locations in Romania was completed between 2004 and 2006. As at December 2019, the authorisation for marketing and use of pesticides has been issued by the National Phytosanitary Authority following the decision of the National Committee for Plant Protection Products Authorisation.

The national inventory on polychlorinated biphenyl (PCB) includes the information of equipment with a PCB volume > 5 dm³ and a concentration > 500 ppm. Nevertheless, the equipment with lower concentration of PCBs is not inventoried. Romania missed the 2010 deadline for decontamination/disposal of equipment with PCB content in volume greater than 5 dm³ in operation. The delay with part of PCBs agenda was caused by gaps or inaccuracies in the national legislation. The level of progress in this issue was not published. The national Secretariat for designated compounds is planned to be resumed to activate effective measures.

The commercial operators holding the equipment containing PCB have the obligation to draw up decontamination and disposal plans. According to Eurostat data, in 2016 altogether 106 tons of waste containing PCB were generated. According to NEPA, for the period 2012–2015 27,172 capacitors and 67 transformers with PCB ranging from 50 ppm to 500 ppm were destroyed in Romania. For the same PCB content equipment, in 2015 there were 5,100 capacitors and transformers stored safely awaiting destruction and 35,000 available/in use or in need of safe storage/destruction.

According to NWMP, Romania has five operating incinerators with an environmental permit and a total projected capacity (not only for PCB-containing waste) of about 50,000 tons per year; 1 plant for the dismantling and decontamination of capacitors and transformers (3,900 t/year) and 1 plant for physico-chemical treatment.
(dichlorination), with a capacity of 4 t/hour. In comparison with 324 t of PCB containing waste generated in 2018, the nominal capacity is sufficient.

Specific streams

Organic waste

About 60 per cent of MSW is organic waste. Referring to the Landfill Directive and with respect to the prolonged transitional period for Romania, the binding target for organic waste disposed on landfills in 2020 is 35 weight per cent of the organic waste disposed off on landfills in 1995 (4.8 million tons). Data reveal a decrease in the amount of organic waste recycled of 38 per cent from 2012 to 2017 while the EU average increased by 16 per cent during the same period (table 10.9). The reduction to 35 per cent of the total quantity (by weight) of organic waste produced in 1995 means that the target value for 2020 is at least 1.68 million tons.

Table 10.9: Recycling–composting and anaerobic digestion of biodegradable waste, 2012–2017, kg/capita

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU 28 estimate</td>
<td>70</td>
<td>72</td>
<td>74</td>
<td>75</td>
<td>81</td>
<td>81</td>
</tr>
<tr>
<td>Romania</td>
<td>29</td>
<td>23</td>
<td>20</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>


Considering that Romania in 2017 generated ca 5.3 million tons of MSW and approximately 60 per cent of it was organic waste it means that there was approximately 3.2 million tons of organic waste generated per 2017. Of it, only 355,000 tons (6.6 per cent of total MSW) underwent composting/digestion and was diverted from landfill. To reach the goal in 2017, Romania would have had to divert 1.455 million tons of organic waste from landfills.

This together with very general and incomplete provisions regulations and policies suggest a challenge for Romania. Within SWIMS projects, green waste from sanitation service activities is composted and garden composters were distributed to households as waste prevention measure.

According to the Romanian Compost Association at the end of 2017 nine facilities operated with a total capacity of 124,318 tons per year; 29 facilities were constructed but not operating with a total capacity of 787,341 tons per year and 7 facilities with capacity of 521,874 tons per year were under construction. If the facilities had been fully operational their total capacity of 1.4 million tons per year would have been very close to sufficient level need of the municipal sector.

Packaging waste

In the MSW sector most of the glass, paper, plastics, aluminium and other metals waste is packaging waste. According to NWMP, 60 per cent of total Romanian packaging waste comes from MSW sector.

The Extended Producer Responsibility principle for packaging producers was introduced in 2004. Since then a competitive system has been developing, with more than 700 entities licensed for collection of packaging waste from the population, industry and commerce. The responsibility can be fulfilled either individually or via an authorised economic actor. The collection operators are specialized operators in waste collection, they are also waste recyclers. Parties involved in the packaging and packaging waste management report annually to NEPA.

By 2019, Romania managed to implement the EU packaging waste framework legislation, though with a certain delay. In 2015 Romania was taken to the Court of Justice of the European Union for failure to amend packaging waste legislation. Issues with unclear definitions of roles and responsibilities within the system and ineffective operation of the system were addressed through the GEO No. 74/2018.

Data on packaging waste showed an increasing trend in its generation with maximum of 1.35 million tons generated in 2016 (table 10.10). The increase can be most probably attributed to the economic growth. Although Romania missed the 50 per cent glass 2015 recovery target, the overall recovery (includes recycling and energy use) and recycling of domestic packaging reached 62 per cent and 60 per cent, respectively, in 2016. Targets for
2025 are 65 per cent for overall recycling targets and 70 per cent for 2030. Based on trends from 2012 to 2016 and the lack of the latest data, it is not possible to predict country performance towards those remote targets.

Table 10.10: Packaging domestic waste, 2012–2016

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Generated (t)</td>
<td>1,059,557</td>
<td>1,054,139</td>
<td>1,244,737</td>
<td>1,396,561</td>
<td>1,350,168</td>
</tr>
<tr>
<td>Recovery (%)</td>
<td>57.4</td>
<td>54.5</td>
<td>56.4</td>
<td>56.9</td>
<td>62.3</td>
</tr>
<tr>
<td>Recycling (%)</td>
<td>56.8</td>
<td>52.8</td>
<td>54.8</td>
<td>55.9</td>
<td>60.4</td>
</tr>
<tr>
<td>Paper and cardboard packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generated (t)</td>
<td>303,108</td>
<td>311,578</td>
<td>388,017</td>
<td>441,764</td>
<td>427,434</td>
</tr>
<tr>
<td>Recovery (%)</td>
<td>70.2</td>
<td>76.9</td>
<td>83.8</td>
<td>89.6</td>
<td>93.2</td>
</tr>
<tr>
<td>Recycling (%)</td>
<td>69.8</td>
<td>74.6</td>
<td>83.4</td>
<td>89.3</td>
<td>92.5</td>
</tr>
<tr>
<td>Plastic packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generated (t)</td>
<td>298,042</td>
<td>290,279</td>
<td>336,818</td>
<td>359,036</td>
<td>348,794</td>
</tr>
<tr>
<td>Recovery (%)</td>
<td>51.9</td>
<td>54.5</td>
<td>46.1</td>
<td>47.5</td>
<td>49.9</td>
</tr>
<tr>
<td>Recycling (%)</td>
<td>51.3</td>
<td>51.7</td>
<td>44.5</td>
<td>46.7</td>
<td>46.5</td>
</tr>
<tr>
<td>Wooden packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generated (t)</td>
<td>239,774</td>
<td>248,660</td>
<td>289,691</td>
<td>334,573</td>
<td>299,876</td>
</tr>
<tr>
<td>Recovery (%)</td>
<td>42.8</td>
<td>29.7</td>
<td>31.3</td>
<td>31.5</td>
<td>31.5</td>
</tr>
<tr>
<td>Recycling (%)</td>
<td>41.1</td>
<td>28.9</td>
<td>26.6</td>
<td>28.8</td>
<td>27.6</td>
</tr>
<tr>
<td>Metallic packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generated (t)</td>
<td>58,333</td>
<td>54,406</td>
<td>65,666</td>
<td>66,830</td>
<td>64,006</td>
</tr>
<tr>
<td>Recovery = Recycling (%)</td>
<td>55.5</td>
<td>52.8</td>
<td>64.2</td>
<td>64.1</td>
<td>62.1</td>
</tr>
<tr>
<td>Glass packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generated (t)</td>
<td>160,259</td>
<td>149,205</td>
<td>164,521</td>
<td>194,347</td>
<td>210,027</td>
</tr>
<tr>
<td>Recovery = Recycling (%)</td>
<td>66.3</td>
<td>49.2</td>
<td>54.2</td>
<td>41.1</td>
<td>64.1</td>
</tr>
</tbody>
</table>


To increase the recovery of packaging, Romania has introduced: i) a contribution of €0.4 per each kg below the binding objective for packaging waste that was not valorized, payable by the Extended Producer Responsibility authorized entity to the Environment Fund; ii) a contribution of €0.4 per kg by entities who introduce packaged goods and packaging on the national market to the Environment Fund; and iii) a deposit refund scheme for reusable bottles with the value of the deposit of €0.1 per bottle since 2019.

Waste batteries and accumulators

The scheme on Extended Producer Responsibility is applied for the management of waste batteries and accumulators. The producers of batteries and accumulators are obliged to organize the collection of waste batteries and accumulators individually or by transferring the responsibilities to collective organization.

The country reporting on treatment of waste batteries and accumulators shows a gap in 2016 when the country target 45 per cent for collection was due (table 10.11). According to the latest available data, Romania collected 20 per cent of waste batteries and accumulators in 2015. Concerning the national reporting issues, the NWMP states an outdated data reporting system on batteries and accumulators based on paper forms. By 2019, Romania has not provided EC with its report on collection of waste batteries and accumulators for 2016 and 2017 (collection rates, indication how the data necessary to calculate the collection rate have been obtained; and levels of recycling achieved; and efficiency of recycling).


<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2014</th>
<th>2016</th>
<th>2018*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generated</td>
<td>59,667</td>
<td>61,643</td>
<td>53,232</td>
<td>39,383</td>
</tr>
<tr>
<td>Recycled</td>
<td>39,699</td>
<td>34,706</td>
<td>0</td>
<td>46,865</td>
</tr>
</tbody>
</table>

Note: *NEPA preliminary data

In 2019 the treatment capacity for waste batteries and accumulators was 75,807 tons. The biggest and most modern treatment facilities, SC Monbat Recycling S.R.L. and SC Rombat S.A, have a total capacity of 70,000 tons per year. Nevertheless, 21,400 tons of waste batteries were exported for treatment while 9,500 tons were imported in 2017.
Waste electrical and electronic equipment

The scheme on Extended Producer Responsibility is also applied to waste electrical and electronic equipment (WEEE), but with a lower efficiency. Only registered producers and importers of electrical and electronic equipment (EEE) can put EEE on the market. Producers and importers can implement the scheme on Extended Producer Responsibility individually, or by transferring this responsibility to authorized operator. The possibility of organizing a clearinghouse system based on establishment of independent third-party, which is acting as a regulator on a competitive market has not been enacted yet.

Comparison of EEE products put on the market and the amount of WEEE collected from the resident population shows substandard performance in WEEE collection, below the national objectives (table 10.12). The national target for WEEE collection for 2015 (4 kg/capita EU 2015 target) was not met, nor was the target for 2016–2019 (45 per cent). The low collection rates on a local public authority level are caused by an underdeveloped infrastructure for the collection of WEEE, contradictory obligations regarding the responsibility of collecting WEEE from the population. Unclear definitions of responsibilities remain in the applicable legislation.

![Table 10.12: EEE products and WEEE, 2012–2016, kg per capita](https://example.com/table1012)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE products put on the market</td>
<td>6.51</td>
<td>6.85</td>
<td>7.01</td>
<td>8.49</td>
<td>10.19</td>
</tr>
<tr>
<td>WEEE collected from households</td>
<td>1.04</td>
<td>1.55</td>
<td>1.50</td>
<td>1.79</td>
<td>2.19</td>
</tr>
<tr>
<td>WEEE collected from other sources</td>
<td>0.11</td>
<td>0.11</td>
<td>0.12</td>
<td>0.27</td>
<td>0.17</td>
</tr>
<tr>
<td>WEEE treated in Romania</td>
<td>1.12</td>
<td>1.60</td>
<td>1.56</td>
<td>1.74</td>
<td>2.05</td>
</tr>
<tr>
<td>WEEE treatment (EU 27)</td>
<td>1.15</td>
<td>1.66</td>
<td>1.62</td>
<td>1.81</td>
<td>2.21</td>
</tr>
</tbody>
</table>


The WEEE recovery rates between treated vs collected WEEE have fulfilled the binding objectives for all WEEE categories between 2012 and 2017 with an average of 92 per cent of WEEE treated. NWMP estimates that Romania has 120,000 tons annual treatment capacity of WEEE. In 2016, 200,000 tons of EEE were placed on a market and 47,000 tons of WEEE (2.2 kg per person) were collected. If the 4 kg per person would be collected, as per the EU 2015 target, the treatment capacity would be more than sufficient.

According to the EC, Romania has failed to meet its obligation to provide the 2015 report on the progress made towards the implementation of the targets in structure defined by the Commission including a detailed description of how the data have been compiled.

Sludge

Sludge is a waste stream resulting mainly from almost all human activities using water and treating it. Statistical data from Eurostat show that urban wastewater treatment plant sludge production was constantly increasing from 2012 to 2017, indicating that the connection to sewage system and installment of wastewater secondary treatment has been increasing in Romania (table 10.13). In 2017, 53.56 per cent of wastewater sludge is landfilled, 10.12 per cent is used on the agricultural land, 3.82 per cent incinerated, 0.4 per cent for composting and the remaining 32.08 per cent for other use (figure 10.3). The connection rate to sewage collection systems stood at 48 per cent nationwide in 2015. Should the collection and treatment system of urban wastewater increase, the pressure on sludge management of urban wastewater treatment plant would also increase.

A draft law on sludge management is expected to cover all the treatment processes of the sludge management prior to its utilization on agricultural land as stipulated by the Council Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture.

![Table 10.13: Sewage sludge production and disposal, 2012–2017, 1,000 tons](https://example.com/table1013)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban wastewater treatment plant Sludge production</td>
<td>85.40</td>
<td>172.80</td>
<td>192.33</td>
<td>210.45</td>
<td>240.41</td>
<td>283.34</td>
</tr>
<tr>
<td>Sludge disposal</td>
<td>48.40</td>
<td>172.40</td>
<td>192.33</td>
<td>155.81</td>
<td>240.41</td>
<td>283.34</td>
</tr>
<tr>
<td>Agricultural use</td>
<td>2.20</td>
<td>8.00</td>
<td>13.05</td>
<td>10.64</td>
<td>17.56</td>
<td>35.00</td>
</tr>
</tbody>
</table>
Compost and other application | 1.30 | 0.30 | 0.20 | .. | 0.34 | 1.76
Landfill | 43.00 | 117.70 | 145.14 | 104.23 | 177.61 | 168.45
Incineration | 0.40 | .. | 1.24 | 0.50 | 0.38 | 0.02
Other | 1.40 | 46.50 | 32.70 | 40.91 | 44.49 | 78.09

Other wastewater treatment plant
Sludge production | 165.20 | 224.00 | 277.54 | 200.72 | 158.33 | 151.41
Sludge disposal | 107.20 | 195.20 | 277.54 | 138.67 | 158.33 | 151.41
Agricultural use | 11.20 | 17.00 | 16.47 | 18.60 | 14.29 | 9.00
Compost and other application | 5.70 | 0.20 | 0.03 | .. | .. | ..
Landfill | 49.00 | 11.60 | 53.42 | 66.22 | 61.32 | 64.41
Incineration | 49.00 | 11.60 | 53.42 | 66.22 | 61.32 | 16.60
Other | 41.20 | 147.00 | 192.47 | 39.72 | 63.30 | 61.39


Figure 10.3: Sewage sludge disposal, 2012–2017, 1,000 tons

End-of-life vehicles

The latest data available on end-of-life vehicles cover 2015, when the country missed the target for 95 per cent reuse and recovery of end-of-life vehicles (table 10.14). The country has not fulfilled its reporting obligation on end-of life vehicles for 2015 and 2016 to the EC by 2019 (to report on the targets set by the Directive 2000/53/EC on end-of life vehicles, description of the data used). Between 2012 and 2015, the number of end-of-life vehicles decreased from 58,000 to 42,000 with absolute minimum of 38,000 in 2013. High number in 2012 is a result of Romania’s response to the economic crisis stimulating the economy growth through subsidies on new cars in exchange for obsolete vehicles discard.

Table 10.14: End-of-life vehicles, 2012–2016, per cent

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Target - Reuse and Recycling</td>
<td>80.0</td>
<td>80.0</td>
<td>80.0</td>
<td>85.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Romania</td>
<td>84.0</td>
<td>83.8</td>
<td>84.1</td>
<td>85.1</td>
<td>..</td>
</tr>
<tr>
<td>EU Target - Reuse and Recovery</td>
<td>85.0</td>
<td>85.0</td>
<td>85.0</td>
<td>95.0</td>
<td>95.0</td>
</tr>
<tr>
<td>Romania</td>
<td>86.0</td>
<td>87.4</td>
<td>88.5</td>
<td>90.8</td>
<td>..</td>
</tr>
</tbody>
</table>

Source: Eurostat, 2019

In 2014 EU started infringement procedure regarding the incomplete transposition of Directive 2000/53/EC on end-of-life vehicles but ended the process in 2015 after Romania adopted the Law No. 212/2015 on end-of-life vehicles. As of 2016, Romania set in force the scheme on Extended Producer Responsibility in the end-of-life vehicles sector. Recently, the scheme on Extended Producer Responsibility for end-of-life vehicles has applied in the individual system. The producers chose to set up collection networks through private contracts with authorized dismantling companies of end-of-life vehicles.

By 2019 there had been altogether 735 authorised economic subjects active on collection and/or treatment and shredding of end-of-life vehicles. As at December 2019, the country was planning to improve the practice on Extended Producer Responsibility and data reporting system on end-of-life vehicles.
Used tyres

Romania has applied the scheme on Extended Producer Responsibility for used tyres since the GD No. 170/2004 on the management of used tyres came into force. Legal entities which put on the market new tyres and/or used tyres for re-use are obliged to collect 80 per cent of tyres placed on the market in the previous year and to use the whole amount of used tyres collected. These obligations can be fulfilled individually or in collective system operated by authorised company.

Data on treatment of used tyres are not available on Eurostat for Romania. The main country objectives to increase the collection rate and material and energy use were according to the NWMP fulfilled in 2012–2014. Most of the used tyres were co-incinerated in cement factories. Update of the legal framework regarding the management of used tyres and promoting material use or reuse approaches would help to achieve higher recycling targets.

Used oils

The used oil, also referring to waste oil, management activity is regulated by the GD No. 35/2007 regarding the management of waste oils. The scheme on Extended Producer Responsibility has been introduced to manage used oils. According to this regulation, parties involved in the waste oil management system report annual data to the NEPA (table 10.15).


<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2014</th>
<th>2016</th>
<th>2018*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generated</td>
<td>78,027</td>
<td>68,592</td>
<td>65,778</td>
<td>42,002</td>
</tr>
<tr>
<td>Waste treatment</td>
<td>57,534</td>
<td>45,829</td>
<td>43,120</td>
<td>35,350</td>
</tr>
<tr>
<td>Treated/generated (%)</td>
<td>73.7</td>
<td>66.8</td>
<td>65.6</td>
<td>84.2</td>
</tr>
<tr>
<td>Disposal - landfill</td>
<td>1,351</td>
<td>2,043</td>
<td>234</td>
<td>834</td>
</tr>
<tr>
<td>Disposal - incineration</td>
<td>1,466</td>
<td>583</td>
<td>2,166</td>
<td></td>
</tr>
<tr>
<td>Incinerated/treated (%)</td>
<td>2.6</td>
<td>1.3</td>
<td>5.0</td>
<td>2.4</td>
</tr>
<tr>
<td>Recovery - energy recovery</td>
<td>33,515</td>
<td>35,062</td>
<td>18,710</td>
<td>..</td>
</tr>
<tr>
<td>Recycled/treated (%)</td>
<td>58.3</td>
<td>76.5</td>
<td>43.4</td>
<td>..</td>
</tr>
<tr>
<td>Recovery - recycling</td>
<td>21,202</td>
<td>8,141</td>
<td>22,010</td>
<td>..</td>
</tr>
<tr>
<td>Recycled/treated (%)</td>
<td>36.9</td>
<td>17.8</td>
<td>51.0</td>
<td>..</td>
</tr>
</tbody>
</table>

Source: Eurostat 2019
Note: * NEPA preliminary data

The NWMP indicated a number of challenges and targets concerning the period 2012–2018 and on to be addressed and are still relevant to improve the collection of waste oils from users/population, eliminate the illegal market of waste oils, encourage energy recovery in cement kilns and improve collection network in each county. In addition, the legislation on waste oil management lacked objectives that the responsible persons, individually or through third parties, should have achieved. Also, data on waste oils were only reported by the operators collecting hazardous waste.

10.2 Transboundary movement of waste

Imports of waste to Romania are not allowed for landfilling and incineration purposes. Romanian exports and imports of hazardous waste show an increasing trend between 2012 and 2017. Data on transboundary movement of non-hazardous waste are incomplete because of changed reporting obligations in 2015. Since 2016 EU entities have not been obliged to report on the so-called Green waste (recyclables) transboundary movement.

In 2017 exports of hazardous waste to EU countries dominated waste lead acid batteries (21,395.643 t), lead paste (1,741.622 t) and waste mineral oils (1,654.15 t). The predominant purpose of waste export was for recovery.

NEPA is the competent authority of all notifications of imports, exports and transit according to the Regulation 1013/2006 on shipments of waste. In 2017, imports of hazardous waste items from EU included waste lead acid batteries (9,184.873 t); treated recycled wood (1,578.4 t); mixed batteries (338.22 t). Altogether 65.91 tons of capacitors contaminated with PCB were imported for recovery purposes.
According to data from the Ministry of Environment, Waters and Forests until 2015 substantial amount of non-hazardous waste imports represented metals, plastics, paper, plastics packaging and end-of-life vehicles.

10.3 Practices and trends in chemicals management

Management of chemicals in Romania is driven by the EU framework regulations on chemicals management (directly applicable on a national level), including Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Classification, Labelling and Packaging (CLP) Regulation (EC) No 1272/2008, and Biocidal Products Regulation (BPR) Regulation (EU) 528/2012.

**Production**

From 2012 the chemical sector was keeping a descending trend in terms of number of active enterprises, employees and production. From 2013 to 2017 production decreased from 5.5 to 3.2 million tons per year (table 10.16). The chemical industry produces mainly petrochemicals, organics and inorganics, agrochemicals, varnishes and paints, lubricants and cosmetics.

**Table 10.16: Chemicals production, 2013–2017, million tons**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.529</td>
<td>5.125</td>
<td>4.467</td>
<td>3.636</td>
<td>3.245</td>
</tr>
</tbody>
</table>

*Source: NEPA and reports, 2019.*

Romania regulates production and consumption of chemical substances. Pursuant to the REACH Directive producers of chemicals in Romania are obliged to register their chemical products with planned production capacity higher than 1 ton per year. Production companies must identify and manage risks linked to substances they manufacture and market in the EU. Producers are obliged to demonstrate how the substance can be safely used and must communicate the risk management measures to the users. If the risks cannot be managed, authorities can restrict the use of substances. Government disincentivise economic entities from marketing dangerous substances with specific charge of 2 per cent of the marketed value.

Only a few NEG inspections found noncompliance relating to storage and labelling of chemicals. NEG conducted 147 and 203 REACH and CLP related inspections in 2017 and 2018 respectively and posed sanctions reaching 15,000 lei (€3,100) in 2018. For comparison, sanitation operators were sanctioned with 1.5 million lei in 2018.

**Imports and exports**

In 2018 there were altogether five import responses by Romania under the EU Regulation No. 649/2012 concerning the export and import of hazardous chemicals (PIC) including consignments of pesticides and chemical compounds for industrial use. Between 2012 and 2017 there were eight import responses recorded in database. The process is under the responsibility of the Ministry of Environment, Waters and Forests. The permit issued is valid for 1 month, indicating inter alia the place of entrance to the country. Other chemicals that are excluded from the scope of the PIC regulation, are being traded, for example in 2017, exports reached US$2.2 billion and imports US$8.2 billion.

**Storage and use**

The most commonly used chemical substance from 2013 to 2017 was nitric acid with 0.59 million tons and anhydrous ammonia with 0.52 million tons in 2017 (table 10.17).

**Table 10.17: Selected chemicals in use, 2013–2017, tons**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>611,000</td>
<td>620,000</td>
<td>670,000</td>
<td>650,000</td>
<td>590,000</td>
</tr>
<tr>
<td>Ammonia anhydrous</td>
<td>604,000</td>
<td>540,200</td>
<td>484,700</td>
<td>452,300</td>
<td>515,000</td>
</tr>
</tbody>
</table>

131 UNEP – Rotterdam convention database
132 The World Integrated Trade Solution (WITS) software
Calcium dihydroxide 303,680 306,000 406,900
Diesel (petroleum), hydrotreated light 129,000 763,084
Fuels, diesel 90,300 80,000
Urea 72,300 72,300

Source: NEPA database and reports

Any person or legal entity which uses and store these and other chemicals in Romania must respect i.a., the following obligations:

- Not cause contamination of the transport vehicle/or the environment;
- Store chemicals only packaged and in protected places, well ventilated;
- Keep strict records on quantity, characteristics, protection measures, management of used containers;
- Provide information and data in accordance with the legislation in force;
- Eliminate the dangerous substances and preparations that have become waste accordingly to protect environment and human health;
- Identify and prevent the risks that dangerous substances and preparations may pose to the population and to report on discharges or accidents to authorities.

NEG inspects chemicals management sites. Inspections focus on general obligations and those specific to an operator, checking inter alia chemicals safety data sheets requirements, such as classification, labelling, storage and handling, accidental release measures, first aid measures, and firefighting measures. In case of non-compliance, the impound chemicals are held in legal custody accordingly and in facilities with properly authorized warehouses. The regular inspections make operators store only necessary volumes of chemicals, avoid expiration of chemicals, preventing chemical waste generation. Moreover, operators are pushed to replace the substances of very high concern with less or non-hazardous substitutes.

**Transportation**

Romania applies the rules for carriage of dangerous goods by road (GD No. 1175/2007), under the responsibility of the Ministry of Transport. However, some accidents resulting in spill of chemicals was recorded repeatedly between 2012 and 2018 by NEG. Nevertheless, according to NEPA, no major impact on the environment and human health was reported.

For transportation of healthcare waste (including chemicals), the company must follow the specific conditions which are stipulated by the GD No. 1061/2008 on non-hazardous waste and hazardous waste transport in Romania. The motor vehicles are certified by the National Institute for Public Health through a technical report, based on the MO No. 613/2009.

**Disposal**

Chemical waste generation increased by 27 per cent between 2012 and 2018 from 61,000 tons to 78,000 tons in 2018.

The same common principles applicable to other waste streams drive the chemicals disposal, though with some specifications. Chemical safety assessment is taken within the chemical substance registration before its production is permitted. The registration includes recommendations on safe and environmentally compliant way of its disposal. Not all the waste generated is treated prior to its disposal in Romania. In 2016 it was 72 per cent. As for the total hazardous and non-hazardous chemical waste, the divert from landfilling (12 per cent in 2012 and 1 per cent in 2016) to waste energy recovery (14 per cent in 2012 to 52 per cent in 2016) or incineration is worth to mention. If the waste is landfilled, it is usually done on the facility, which is operated within the producer’s license and the environmental permit. Lack of chemical waste disposal facilities is not reported in the NWMP. Still, the country annually exports thousands of tons of chemicals or chemicals containing waste.

The municipal sector also generates chemical waste that can be separately collected, treated and disposed. While hazardous components of MSW like waste electric and electronic equipment, batteries and fluorescent lamps are separately collected, this is not the case of chemical waste. The system of separate collection yards has not been
developed; therefore, it is highly probable that most waste chemicals from the municipal sector end up in sewage system, on compliant landfills or in the environment.

10.4 Pressures from waste and chemicals

**Air**

Since 2012, the total GHG emissions by the waste management sector have increased and keep almost a stagnating trend of about 5.8 million CO$_2$-eq. tons (figure 7.1). The major impact is caused by the methane (90 per cent). GHG emissions and other emissions can be attributed mainly to formerly established non-compliant waste management operations (non-compliant landfills and dumpsites) and storage of waste containing biodegradable compounds, transportation. Mining waste management contributes to dust particles emissions.

Selected air pollutant emissions (ammonia, non-methane volatile organic compounds, PM$_{2.5}$; PM$_{10}$; sulfur oxides and nitrogen oxides) by waste management sector show reduction of total emissions between 2012 and 2017 with minimum in 2016. Volatile organic compounds pollution is widespread in many industrial plants in the chemical and metallurgical industries, but also in fuel burners and waste incinerators. In comparison with acidifying impacts of other sectors, sulfur, nitrogen oxides and ammonia are less air polluting, way after energy and agricultural sectors. Chemical production was the second most contributing to non-methane volatile organic compounds emissions from industrial subsectors in 2017.

The waste management emits also dioxin and furan emissions (POPs), in 2017 it was the second largest source of polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans after energy sector. In 2017, 33 incineration and co-incineration plants were inventoried and capacities of both types of plants have been steadily increasing since 2014. The 2017 capacities were 0.27 million tons per year for incineration and 1.7 million tons for co-incineration. Nevertheless, the major waste management installations are subject to rules on integrated prevention and control of pollution (chapter 2). There were 125 of these sites in 2017.

Waste management installations are subject to complaints of citizens for its ill operation or low quality of air in close vicinity to waste management sites. Incidents associated with waste and chemicals affecting air quality are not an exception. According to NEG, in 2018 there were 44 waste and chemicals management related accidents that affected the air quality.

**Water**

Non-compliant landfills, dumpsites, accidental pollution emissions and abandoned industrial sites contribute to contamination of surface water and groundwater. The same with the industrial installations (chemical industry included) discharging wastewater, both compliant and non-compliant with environmental standards. In terms of nutrients contribution, the greatest pressure is presented by human agglomerations (45 per cent). In 2017 there were in total 70 incidents reported resulting in pollution of surface water courses, including 6 semi-solid waste release; 28 with untreated wastewater; 19 with oil and hydrocarbons; 2 mine waters.

According to WHO, in 2018, in Romania, 56.7 per cent of domestic wastewater received safe treatment (indicator 6.3.1 (Proportion of domestic and industrial wastewater flows safely treated)) of the target 6.3 (by 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally)) of the SDG 6 (Ensure availability and sustainable management of water and sanitation for all). According to Eurostat the share of the population connected to at least secondary wastewater treatment increased from 35.3 per cent in 2012 to 46.5 per cent in 2017. The performance of the economy sector is not published. The compliant wastewater management is one of the pre-conditions to the environmental permit that economic operators must obtain. In domestic sector the improvement is tangible, though Romania did not meet targets for wastewater collection and treatment stemming from its EU membership. The country estimated that the basic measures for human agglomerations to comply with the Directive 91/271/EEC concerning urban waste-water treatment will have costed €12.8 billion. To support the process, the Environment Fund established the “Water - sewerage network” Programme to fund the construction of sewage treatment plants, sewage networks, wastewater treatment plants, for agglomerations with more than 2,000 inhabitants. As of 2019 over 230 contracts were financed for an amount of €202 million. The National programme for compliant measures includes works for
extension or construction of sewerage network and plants with secondary and advanced treatment and sludge management.

In 2017, 61.4 per cent of water bodies had ambient water with good quality (global indicator 6.3.2 (Proportion of water bodies with good ambient water quality)). Data on ecological state or the ecological potential of the monitored watercourses indicate that 51.3 per cent of rivers were of very good or good quality in 2017 and 44.33 per cent of moderate quality. Though, the quality of surface water shows decreasing trend since 2012. According to the National Institute for Public Health, anthropogenic activities negatively affected the quality of surface water and groundwater. More than 40 per cent of the total length of rivers monitored cannot be used for centralized drinking water supply for its natural quality patterns. Of those potentially usable, 55 per cent are contaminated.

Waste and chemicals management activities in Romania have been contributing to contamination of waters mainly through accidental pollution, non-compliant disposal of waste and contaminated chemical industry sites. Pollutants can reach waters also via airborne pollution resulting from waste management and chemical industry. In 2017, 1 per cent of MSW as disposed on non-compliant landfills and there are 47 non-compliant industrial landfills and 27 non-compliant landfills that must be rehabilitated according to provisions of Directive 1999/31/CE on the landfill of waste. For rehabilitation of these sites, specifically dedicated programmes administrated by the Environment Fund have been launched. By 2019, 13 applications regarding the municipal landfills had been submitted, out of which 8 had been already granted €9.5 million worth. The Environment Fund overtakes the responsibility of those non-compliant industrial sites and their rehabilitation, whose owners are in bankruptcy. The latest inventory of potentially contaminated sites identified 155 mining and metallurgy sites; 23 chemical industry sites; 693 oil industry sites; 90 others.

To achieve the target 6.3, the waste management and chemicals policy framework is in place. The EIA procedure is a component to the environmental permit procedure of waste management, wastewater and chemical management operations. Pollution prevention measures are applied within the IPPC. Control of major-accident hazards involving dangerous substances is being implemented and inspected within the country, and sanctions are applied according to the “polluter pays” principle.

Rehabilitation of non-compliant landfills is planned to be completed by 2023, but the real completion would probably exceed this date. Although these sites are no more operating, they have not been encapsulated and are not in compliance with the Landfill Directive. Thus, these sites still emit pollutants and pose a risk to water quality. For operations which were not subject to implementation of modern environmental standards, i.e. earlier state-owned enterprises in 1990s and earlier, there is a sound policy framework in place, i.e. the National Strategy and National Action Plan for Management of Contaminated Sites since 2019. Substantial funds have been spent to rehabilitate non-compliant waste disposal sites and contaminated sites also with use of EU funds.

However, the range of these historic environmental burdens is overwhelming for Romania. Effective solution of this issue is hampered by occasional unclear property rights and inappropriately resolved responsibilities for historical contamination which was caused by the State. The estimate of financial sources needed to remediate these sites is estimated at about €8.5 billion.

The total share of the waste and chemical management sector on pollution of waters is not yet known. To collect part of the financial sources needed, the country has opportunity to introduce a landfill tax on all types of waste disposed (30 million tons of waste per year would generate €1.5 billion annual income, provided the waste disposal tax of €50 per ton is introduced). Progress in proportion of wastewater safely treated achieved tangible results, between 2012 and 2017 it was 11 per cent improvement.

Soil and land

Physical-chemical and chemical soil pollution affected 900,000 ha of agricultural land in Romania in 2018. As there is no specific soil-protection oriented regulation on the EU level, the country applies general environmental protection instruments to prevent degradation of soil. These instruments concentrate in urbanistic and environmental permit procedures, including EIA. Procedures assess impacts of an operation on environment and its conflicts of interests of sectoral laws. If a potential impact is identified, it sets preventive and mitigation measures, monitoring the environmental impact. Quality standards for acceptable soil contamination are in place.
and include inter alia alert and intervention thresholds for soil pollutants for identification of contaminated sites. Those values are established for sensitive land use and less sensitive land use.

Despite the general soil degradation-preventing measures, chemicals production, and in less extend waste management operation, affect large areas of soil via airborne pollution. According to the 2017 NEPA’s Report of Indicators, airborne pollution originates from chemical fertilizer plants, pesticides productions, oil refining activities and others, like in Bacau with 105,000 ha of affected agricultural land. Chemical plants also contribute to acidification of soil through emissions of substances that create acid rain. Dismantling of ash deposits of coal-fired powerplants emits dust particles and contaminates soil, eventually waters, although environmental damage stemming from such technological indiscipline is easily preventable. In total, airborne substances stemming from industrial and agricultural activities caused soil pollution on area of 360,000 ha as reported in 2018.

Soil suffers damage also due to an accidental contamination. The most frequently affected areas were zones where accidents happened on oil/crude oil, sludge and fuel, saltwater containing equipment. NEG registers 54 waste and chemical sector related incidents in 2018. Originators of accidents are obliged to take necessary measures to mitigate negative impact, to decontaminate site and are sanctioned according to the “polluter pays” principle.

Previous non-compliant operations of waste management and chemical industry facilities have been contributing to contamination of soil and other environmental assets for decades. In 2018, waste deposits have contributed to excessive degree of soil damage on 5,800 ha, industrial inorganic waste deposits (including mining and quarrying) affected an area of 800 ha, and 570 ha were damaged by radioactive matters. Romania had been reporting the same numbers from 2012, which indicates a lack of progress in addressing these issues.

**Landscape**

Of all waste and chemicals management activities in Romania the most significant effects on natural landscape has the waste storage or disposal of mining waste on surface. To gain the overall picture of the effect and extent of soil degradation, Romania monitors the area of land which is affected by activities resulting from waste management, such as deposits, waste dumps, tailing ponds, flood tailings and dumps. The total area affected by waste deposits had been constantly reported at level of 6,639 ha (table 10.18) by NEPA from 2012 to 2018. Covering the soil with waste and soil residues is an example of improper land-use management which has led to the loss of about 18,000 ha of agricultural land.

**Table 10.18: Degree of soil degradation by selected waste-related processes, ha**

<table>
<thead>
<tr>
<th>Process</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>Very high</th>
<th>Excessive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposits, waste dumps, tailing ponds, flood tailings, dumps, etc.</td>
<td>247</td>
<td>63</td>
<td>236</td>
<td>320</td>
<td>5773</td>
<td>6639</td>
</tr>
<tr>
<td>Inorganic wastes and residues from industry</td>
<td>10</td>
<td>217</td>
<td>207</td>
<td>50</td>
<td>360</td>
<td>844</td>
</tr>
<tr>
<td>Radioactive matters</td>
<td>-</td>
<td>500</td>
<td>-</td>
<td>-</td>
<td>66</td>
<td>500</td>
</tr>
<tr>
<td>Organic waste and residues from the light food industry and others</td>
<td>13</td>
<td>19</td>
<td>12</td>
<td>17</td>
<td>287</td>
<td>348</td>
</tr>
<tr>
<td>Wastes agricultural and forestry residues</td>
<td>37</td>
<td>65</td>
<td>90</td>
<td>642</td>
<td>306</td>
<td>1,140</td>
</tr>
<tr>
<td>Animal manure</td>
<td>2,883</td>
<td>993</td>
<td>363</td>
<td>265</td>
<td>469</td>
<td>4,973</td>
</tr>
<tr>
<td>Pesticides</td>
<td>1,058</td>
<td>650</td>
<td>224</td>
<td>77</td>
<td>67</td>
<td>2,076</td>
</tr>
<tr>
<td>Saltwater from oil extraction</td>
<td>952</td>
<td>497</td>
<td>408</td>
<td>205</td>
<td>592</td>
<td>2,654</td>
</tr>
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<td>473</td>
<td>248</td>
<td>5</td>
<td>25</td>
<td>751</td>
</tr>
</tbody>
</table>


**Biodiversity and Ecosystems**

No studies on the impact of waste and chemicals on the biodiversity have been carried out in Romania.

**Human health**

Hazardous chemicals pose risk to human health of direct exposure. Activities linked to hazardous chemicals in a professional sphere are subject to inspections and enforcement of the Labour Inspection and county public health departments. Transposition of the corresponding EU Directives has been following its amendments (the latest in 2019). Health and safety rules cover protection of workers from carcinogens, mutagens and asbestos. These rules
Part III: Media and pollution management

set inter alia occupational exposure limits, minimum safety and health requirements for workers, also classification and labelling and packaging of chemicals.

Employers are responsible for reduction of using chemicals, also prevent workers from exposure to chemicals, manage the relating risks, inform competent authorities, provide hygiene and personal protective measures, provide training etc. Workers at risk are supplied with medical surveillance.

Regional public health authorities receive notifications on occupational diseases caused by exposure to chemicals and these data are registered in the National Occupational Diseases Registry. The National Institute for Public Health then publishes annual reports on occupational diseases.

According to WHO, the mortality rate attributed to unintentional poisoning measured by the global indicator 3.9.3, SDG target 3.9 decreased from 0.5 deaths per 100,000 population in 2010 to 0.4 deaths per 100,000 population in 2016 – a decrease of 20 per cent in Romania. In 2016, the EU average was 0.3 deaths per 100,000 population and world average reached 1.45 deaths per 100,000 population. To facilitate implementation of the SDG target 3.9, Romania has set up a target: Identification and remediation of particularly contaminated sites under the Protocol on Water and Health, which implementation is in progress.

Contaminated sites

Many of the former state enterprises remain state property, but a substantial part of them was privatized. During the privatization process after 1990, only minimal environmental requirements were posed on new owners of sites within privatization contracts. But now the contamination resulting from earlier state activities belongs to private owners together with the obligation of its remediation. For abandoned sites, the responsibility of management of the site belongs to the national public authority.

The preliminary national inventory of potentially contaminated sites was drawn up in 2008 and estimated 1,628 potentially contaminated sites. In 2015 the estimate was 1,183 potentially contaminated sites and 210 contaminated sites, and estimated costs for remediation reached €7.145 billion and €1.3 billion, respectively. The latest 2018 inventory of contaminated sites as of 2018 dominates mining sector with mining waste sites, municipal solid waste disposal sites, chemical industry and industrial waste disposal sites. These together make up over hundred confirmed contaminated sites.

The National Strategy and National Action Plan for Management of Contaminated Sites was developed in 2009 and following its objectives defined necessary resources for a short, medium and long-term steps. In 2014 the project “Rehabilitation of historically contaminated sites with petroleum products in Romania - phase 1” was launched, followed by the approval of the National Strategy and National Action Plan for Management of Contaminated Sites in Romania.

To manage contaminated sites from waste management sector Romania launched programmes co-financed by EU funds including the Sectorial Operational Programme 2007–2013, Priority Axis 2 “Development of integrated waste management systems and rehabilitation of historically contaminated sites”; and the Large Infrastructure Operational Programme 2014–2020 Priority Axis 3 - Development of environmental infrastructure under efficient resources management conditions; Programmes of the Environment Fund: “Closure of non-compliant municipal landfills”; “Waste management”; “Closure of non-compliant hazardous and non-hazardous industrial waste landfills”.

Cases of unclear property rights or unsolved environmental liabilities in the process of privatization delay the process of remediation of the contaminated sites. Moreover, unclear delimitation between the historic contamination and current operation can lead to future ambiguities. Owners of contaminated sites are given conditions for the contamination management on their sites within their environmental permit. There are no national deadlines for management of contaminated sites. Most of the commenced works follow site investigation and contamination risk assessments, private owners using private funds. Owners of mining industry might have the opportunity to use EU funds for remediation of sites.
Development and well-being of local communities

Local communities have benefited from increasing waste collection coverage, increasing share of wastewater undergoing treatment and municipal SWIMSs which have widely spread over the country. The population benefits from newly installed and properly operated waste disposal installations and rehabilitation of waste disposal sites done so far and from safe chemicals management. The development though is not distributed evenly over the country. By 2019 48 per cent of counties possessed fully operating SWIMS, in 2018 20 per cent of rural areas were not covered by waste collection services and with sufficient momentum - between 2012 and 2017 the share of population connected to at least secondary wastewater treatment has increased of 11 per cent despite available funding from the EU.

The waste and chemical management operations emit GHG, dioxins, furans, volatile components, acidifying components and dust particles. Some communities suffer from air pollution caused by waste burning. Waste and chemicals operations are also liable for soil and water contamination which is limiting development of local communities. Though, the extent of the contamination is not yet fully known. Romania ranks 45 out 149 countries under the 2019 Social Progress Index\textsuperscript{133}, however, Romania ranks 81 out 149 for outdoor air pollution attributable deaths performance. According to the 2019 Europe Sustainable Development Report\textsuperscript{134} Romania ranked 27 out 28 EU Member States.

10.5 Chemicals emergency preparedness, response and follow-up

The chemical risk management is defined and organized by the legal and institutional framework involving environmental and human health protection and occupational safety and health. in the facilities producing chemicals must obtain an environmental and operational permit. Chemical products undergo a complex process of registration (production > 1 t/y) according to REACH provisions (Law No. 349/2007) which include among others identification of its hazardous properties. Chemical products are accompanied by information on relevant safety, environmental and waste management measures to be followed during the whole life cycle of the product. Chemicals are accordingly classified, labelled and packaged (GD No. 398/2010); used according to their safety data sheets and to country standards on health, safety and environment.

Through the Seveso Directive implementation into the national legislation, the Romania must ensure that specific measures such as safety management system, an internal emergency plan, and safety report sharing are in place to control major accident involving dangerous substances. NEG conducts regular and ad-hoc inspections of companies producing and utilizing chemicals and waste management facilities. In a case of an accident, an operator informs NEG and takes immediate action according to the emergency plan and the plan on health, safety and environment to prevent the environmental and human health harm. NEG also decides which institution should be involved in the emergency inspection, such as NEPA and National Institute for Public Health. If the operator violates any obligations, the operator can subsequently be charged/penalized, operational license can be suspended or the event can be considered as a criminal act and referred to a legal authority. After the investigation NEG sets corrective measures and usually stricter rules to the operator. According to NEG, operators are following nationwide standards.

10.6 Legal, policy and institutional framework

Legal framework

Waste management

The waste management legal framework has incorporated most of the EU legislation provisions, though in some cases with delay (i.e. end-of-life vehicles) or partially (i.e. PCBs containing equipment, wastewater treatment sludge). Primary legislation in some cases have been missing sufficient specification of its provisions by the secondary legislation and technical standards. More specification would enable to fulfil provisions of the primary legislation. It is the case of construction and demolition waste management, biodegradable waste, waste sewage sludge, energy sector waste. Specific provisions on implementation mechanisms would enable the use of waste

\textsuperscript{133} www.socialprogress.org/?code=ROU
\textsuperscript{134} https://eu-dashboards.sdgindex.org/
materials as products (to be applied in construction industry) or as fertilizers on agricultural land (sewage sludge) and would reduce the amount of waste generated, by channelling wastes to a material or energy use.

Some provisions are missing, for example legal provisions enabling and facilitating acquis implementation, especially those concerning cross sectoral activity, specific (fiscal) tools and development of methodological guidelines. There is no listing of specific waste codes affected by a waste stream regulation which would make the application of the waste-related legislation more efficient. Also, short implementation periods for some legal provisions put pressure on end-users. Although the Ministry of Environment, Waters and Forests applies the impact assessment within the process of legal act preparatory phase, the assessment focuses primarily on economic impacts of the regulation, the applicability or the regulation is not subject to deep analysis.

The Law No. 11/2011 on waste regime covers all types of waste, except radioactive materials, decommissioned explosives, faecal matter, wastewater and animal carcasses. Because of the risk of potential infringement due to incomplete implementation of the Directive (EU) 2018/851 amending Directive 2008/98/EC on waste, Romania has adopted the GEO No. 68/2016 to the Law on waste regime. It transposes the EU Waste Framework Directive and establishes provisions to protect the environment and human health, introduces modern principles of the waste management and provisions specific to the country. In addition, the Law defines general duties of parties involved in waste management; specific provisions for municipal sector; waste hierarchy; end-of-waste status. The law constitutes the polluter pays principle, introduces the EU waste coding system; the concept of extended producer responsibility; provisions on recovery, re-use, recycling and disposal of waste; specific provisions on hazardous waste management and special waste streams (oils and biodegradable waste). Moreover, it stipulates conditions for licensing, permitting and registration; provisions on waste management plans; waste prevention programmes; provisions on enforcement and record keeping.

The Law No. 101/2006 regarding the sanitation service of the localities, as amended, establishes the legal framework regarding the establishment, organization, management, financing and control of public sanitation service of the localities.

The GD No. 856/2008 regarding management of waste from extractive industry is transposition of the Directive 2006/21/EC. It deals with waste resulting directly from prospecting, extraction, treatment and storage of mineral resources and quarries. The law requires operators to manage the mineral extractive waste according to approved waste management plan and preventing environmental harm, economic damage and negative effect on human health. The Ministry of Environment, Waters and Forests, through the counties’ environmental authorities, and the National Agency for Mineral Resources are the key authorities for approving the mining waste management plan. The law brings the obligation to establish a financial guarantee before performing any operation involving the pile and storage of extractive waste into a waste installation, which should ensure that all obligations in the environmental permit are financially secured and funds are available for the rehabilitation of waste installation site. The Agency requests the proof of the establishment of a financial guarantee according to a defined procedure. The estimation of the amount of guarantee is done by the operator. The procedure is approved by a common order of the president of the National Agency for Mineral Resources, of the Minister of Environment, Waters and Forests and of the Minister of Economy, Energy and the Business Environment.

**Chemicals**

In case of the chemicals legislation, the link between the international, EU level and national level legislation/policy framework is done through the implementation of the SAICM policy framework and the EU REACH regulations.

The Law No. 349/2007 on institutional framework in chemicals management field establishes the competent authorities and their REACH relating responsibilities.

The implementation of the EU Regulation 1272/2008 on classification, labelling and packaging of substances and mixtures is enabled on the national level through the GD No. 398/2010 concerning establishing measures for classification, labelling and packaging Regulation provisions implementation. The classification, labelling and packaging is based on the Globally Harmonized System of Classification and Labelling of Chemicals of the United Nations. All industrial sectors in Romania, including producers, importers, users, are obliged to classify, label and package their hazardous chemicals appropriately according to standardized system before placing them
on the market. The classification, labelling and packaging regulation has detailed criteria for the labelling elements: pictograms, signal words and standard statements for hazard, prevention, response, storage and disposal, for every hazard class and category. It also sets general packaging standards.

The GD No. 770/2016 regarding some measures for the application of EU Regulation No 649/2012 on the export and import of hazardous chemicals designates the national authorities for the coordination and application of the Regulation provisions. This Decision establishes the contravention sanctions that are applied for the non-compliance with the Regulation provisions. Thus, the Ministry of Environment, Waters and Forests is the national authority for the coordination and implementation of the Regulation, and the General Directorate of Customs and the NEG represents the authorities for control of export and import of hazardous chemicals.

The GD No. 617/2014 on establishing the institutional framework and measures for the implementation of the Regulation (EU) No 528/2012 concerning the making available on the market and the use of biocidal products. According to this GD provisions the Ministry of Health is the competent authority for coordination of enforcement measures on the national level. The State Sanitary Inspectorate, the NEG and the National Sanitary Veterinary and Food Safety Authority are the authorities for inspections of the compliance with Regulation's requirements provisions on official controls and enforcement (article 65).

The GD No. 1218/2006 on establishing the minimum requirements for safety and health at work to ensure workers against the risks related to the presence of chemical agents is the transposition of the Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Policy framework for waste management

Romania’s EU membership commitments define the national waste management policies. To comply with all environmental requirements linked with its accession to EU, Romania had to deal with several specific challenges. Pursuant to the latest NWMP for period 2018–2025, waste management plans for 42 county and Bucharest were developed by county councils with assistance of LEPAs and are expected to be approved late 2020. Local level waste management plans will be developed accordingly.

In 2007, the implementation of the SWIMS projects started, supported by EU funds. Altogether 32 of total 41 counties and Bucharest have been involved so far: 14 county level projects were completed within the Sectorial Operational Programme 2007–2013 and 18 were phased to the Large Infrastructure Operational Programme 2014–2020.

The National Strategy for Waste Management 2003–2013 was revised in 2013 (GD No. 870/2013). The Strategy established the policy and strategic waste management objectives of Romania for the period 2014–2020. In addition to the Strategy, the NWMP for the period of 2004–2014 was prepared to complement the provisions of the Strategy with application of the waste hierarchy promoting measures. Since the NWMP came into force it has been the one ruling waste management strategic document elaborated to comply with the Waste Framework Directive. The NWMP was later prolonged to 2017 due to the delay with preparation of the new one, compliant with the Waste Framework Directive. Its amendment measures cover the period of 2018–2025, although it is based on 2010–2014 data. The Plan is basis for mandatory county waste management plans. This Plan is to be amended by 2022 to implement the latest EU circular economy targets. The country has also developed the Waste Generation Prevention Programme, integrated in one document together with NWMP, both were drafted following the EU guidance document.

The NWMP is the central policy document, which provides data on waste management with critical assessment of its performance and provides reasoning for the status in its analytical part. It defines specific targets according to the EU targets and relating measures. Three options were assessed and designed to assure meeting the national targets stemming from the EU membership and included:

- Zero option - all planned installations including SWIMS projects should be implemented by 2018 and all waste is collected (this condition was not fulfilled by 2019).
- First option included the Zero option and in addition the extension of the system of separate collection of recyclable waste including biodegradable waste, of sorting capacities, of composting capacities,
accomplishment of anaerobic digestion installations, mechanical-biological treatment installations, closure of non-compliant landfills and construction of new compliant landfills, closure of filled up cells.

- Second option included the First option and on top of that municipal solid waste incineration plants with energy recovery.

The installations identified for investment in the NWMP are qualified for the EU funding period 2014–2020. For the upcoming cohesion funding period, EU will not support municipal solid waste incineration installations with energy recovery neither the construction of new compliant landfills. The investments required for the implementation of the Plan are estimated at about €1.154 billion. The Plan also introduces the evaluation of, through affordability assessment, the maximum tariff per ton of MSW. The Plan introduces waste policy tools, such as the pay-as-you-throw instrument. The implementation of targets should be monitored through indicators.

The 2018 Waste Generation Prevention Programme, included into the NWMP, is the first planning document regarding the prevention of waste in Romania. It was developed based on the country obligation pursuant to the EU Waste Framework Directive, though with delay (the deadline for EU countries was the end of 2013) and with use of the EU Guideline for development of waste generation prevention programme. Its measures cover the period 2018–2025. Being the first targeted policy of its kind, the programme summarizes the existing waste prevention measures for municipal waste (individual composting under SWIMS, for food waste (Law No. 217/2016 on reducing food waste), packaging waste (ecotax for plastic bags), electrical and electronic equipment; waste batteries and accumulators and green public procurement (Law No. 69/2016 on green public procurement).

In its second part the waste prevention plan defines the future priority areas and measures for municipal waste (four measures); packaging waste (five); and industrial waste resulting from the processing industry i.e. waste from wood processing and from chemical industry, metallurgy and iron and steel industry (two). The action plan is defined as well as indicators and targets to be followed. The programme is to be evaluated and amended every six years at the latest.

Romania has implemented the Recommendation 8.1 in the second EPR of Romania asking the then Ministry of Environment and Forests and the Ministry of Administration and Interior to analyse possibilities to ensure full coverage of rural areas by waste collection services and draft a relevant plan of action, by developing in 2017 the NWMP that covers urban and rural areas of the entire country and integrates the concept of waste management systems, which has already been implemented with the support of EU funds (so called SWIMSs projects). The integrated system is required to be implemented one per each county, covering both rural and urban areas within the county. As in December 2019 not all counties have developed their integrated waste management systems to a fully functional state; however, the waste collection services are secured in those counties. Thus, between 2012 and 2019 the collection rate of municipal solid waste in a rural area were increased from 60 per cent to 79 per cent, while in urban areas it increased from 87 per cent to 96 per cent.

To assess and manage the soil contamination, the National Strategy and National Action Plan for Management of Contaminated Sites introduced methodology for the inventory and investigation of contaminated sites. With the Law No. 74/2019 regarding the management of potentially contaminated and contaminated sites (excluding mining waste, radioactive waste and other sites) new approach was established. The Law introduced a list of potentially contaminating activities, such as waste management operations and fuelling operations. In the first stage, municipalities are supposed to identify such activities within their territorial jurisdiction. Then, owners or operators of these sites are supposed to fill in questionnaires (mainly assessment of preceding potentially contaminating activities on sites) to be analysed by LEPA. If assessed as purposeful, preliminary investigation of sites and detailed site investigation together with risk assessment would be carried out by the owner/operator of the site through an authorised person. Based on the results NEPA prioritizes and decides whether the site should be remediated or changed the regime of its utilization. In some cases, the owner develops feasibility study and remediation project. Costs of remediation are born by the owner, there are also possibilities for co-funding such activities. Data on potentially contaminated sites and contaminated sites are collected and updated in the National register on contaminated, potentially contaminated and remediated sites, managed by NEPA.

The 2014 National Healthcare Waste Management Strategy and Plan, revised in 2019, is the policy document on medical waste management.
The key strategic document for POPs management is the National Plan for the Implementation of the Stockholm Convention on POPs for the period 2008–2029.

**Chemicals Policy**

As a part of the Project “Strengthening Planning and Budgeting Capacity and Supporting the Introduction of Performance Budgeting” 4-year plans for the key institutions have been prepared to create relevant policy framework and promote cooperation and exchange of information between institutions. For environmental aspects of chemicals management, the Institutional Strategic Plan 2019–2022 for the then Ministry of Environment was developed. The Plan has major strategic objectives and indicators related to objectives to reduce the effects of hazardous substances on the environment and human health. The Ministry of Environment, Waters and Forests has recently conducted inter and intra institutional capacity building campaigns, organized thematic workshops and trainings, developed thematic methodologies. These focus on chemicals, POPs and biocides, application of REACH and classification, labelling and packaging for industries and regulatory risk management.

The Ministry of Health also has its strategic framework to monitor the health risk resulting from hazardous substances, aiming at optimal cooperation of institutions involved in regulating, monitoring and responding to environmental accidents.

**Institutional framework for waste management**

The Ministry of Environment, Waters and Forests is responsible for waste management. It is responsible for the preparation of laws and transposition of waste management related EU directives and international waste management treaties. It is also responsible for the national waste management strategy, policy preparation, its update and implementation. The Ministry is reporting to the Government and international institutions on country performance in its waste management commitments.

NEPA is responsible for implementation of policies, strategies and legislation at national level. It also provides technical support and data to the Ministry. It is responsible for collection and reporting of waste management national data from parties involved in the waste management system and reports to the National Institute of Statistics and Eurostat. NEPA issues environmental permits for activities which cover more than one county and coordinates LEPAs. On county level, LEPAs issue environmental permit for municipal sector and other sectors waste management installations. LEPAs also support county councils in the drafting process of the county waste management plans. Nevertheless, to fulfil all these obligations NEPA does not have enough human resources especially on county level, which limits its working capacities.

NEG is responsible for control and enforcement of the environmental law. NEG can sanction economic operators for non-compliance with conditions stipulated by the environmental permit. NEG could ask NEPA or respective LEPAs to suspend or revoke environmental permits in case of violation of the environment and regulatory conditions (industrial pollution control and risk management, hazardous substances), it imposes measures to prevent risks and reduce environmental threats. Also, this institution has been facing the shortage of human capacities, with difficulties to attract qualified staff mainly on subnational level.

The Ministry of Regional Development and Public Administration participates in drawing up the NWMP; provides support to local public administration authorities to set up their waste management systems; develops or participates in municipal solid waste management strategies and programmes; supports local public administration authorities in implementation of SWIMSs and develops specific regulations related to waste management for local public administration authorities. Support from the ministry to local authorities would become less needed with improving personnel capacities on municipal level. The National Romanian Regulator for Public Services, coordinated by the Ministry, controls the public services quality including waste management which is under the responsibility of municipalities. On the national level it mainly prepares and issues quality standards (tertiary legislation) and it oversees waste management operators licensing. The Regulator adopts methodological norms regarding tariffs for sanitation services, the framework regulation of sanitation services, the tender specifications and the framework contract for the provision of the sanitation services. The Regulator activity is divided into eight local agencies.
Municipal level

Local public administration authorities are responsible for municipal waste management including collection, separate collection, treatment and disposal of MSW including hazardous waste. They organize the services either directly through their specialized departments (can be joined together with other municipalities to supply local or county services) or delegate the sanitation services by contracting external operators (mixed or private ownership). However, personnel capacities on municipal level lack experience together with environmental and management qualification to control or manage sanitary services. Therefore, they receive methodological and quality control from different institutions.

In connection with SWIMSs, municipalities create intercommunity development associations usually on a county level. Their purpose is to couple administrative-territorial units to prepare and promote regional development projects that are of common interest for its members in the field of a public utility service. In case of SWIMSs the purpose is the rehabilitation, modernization and development of the public utilities systems – sanitation service. Payments to the collection systems are collected by municipality only from citizens, companies and institutions who have no contract signed with the operator of waste collection services.

Local councils approve the rules for providing the waste collection service, its parameters, rights and responsibilities of all stakeholders; it approves tender specification for operators; framework contracts with users on providing the waste collection service. They also approve tariffs and tariff adjustments requested by economic operators. The National Romanian Regulator for Public Services’ agencies on the municipal level grant, amend, suspend or revoke licenses for operators of waste collection and disposal systems in a municipal sector. The Regulator also monitors operators and the local public administration authorities in implementation of, and compliance with, the relevant legal framework and provides methodological guidance and gives financial penalties. Tariff setting, control of quality, monitoring of operators, compliance check, are activities that are in the interest and responsibility of municipalities.

Municipalities are responsible for their municipal waste management system; however, they have limited capacities to effectively control the quality of sanitary services and its economic sustainability. They are not supported to develop their waste management plans or cannot outsource them, monitor their performance, and manage tendering procedures. Local level receives institutional support from two ministries and their respective specialized agencies.

The key institutions responsible for the management of POPs waste in environmental context involve the Ministry of Environment, Waters and Forest, NEPA, NEG, County EPAs. The Ministry of Agriculture and Rural Development is the main authority for pesticides management.

Institutional framework for chemicals management

Registration, Evaluation, Authorisation and Restriction of Chemicals

The Ministry of Environment, Waters and Forests coordinates the implementation of REACH Regulation and cooperation with the EC and European Chemicals Agency. The Ministry is responsible for reporting to the EC in line with Art.117 provisions. NEPA implements REACH Regulation in cooperation with the EC and European Chemicals Agency and is the national helpdesk. NEG enforces, fines, and sanctions in case of noncompliance.

The Ministry of Health is responsible for human health protection aspects.

The Ministry of Labour, Family, Social protection and Elderly is responsible for aspects of occupational safety and health.

The Ministry for National Defence is responsible for compliance with Art. 2 (3) of REACH Regulation and national regulatory system.

The National Labour Inspection is responsible for enforcement of occupational safety and health aspects.
Classification, Labelling and Packaging

Institutions involved in implementation of the classification, labelling and packaging include the Ministry of Environment, Waters and Forests for coordination of CLP Regulation implementation according to Art. 43.; the Ministry of Health for the classification and labelling harmonization according to Art. 37 (1); NEPA for implementation of CLP Regulation and national helpdesk; NEG for enforcement; and the National Authority for Consumer Protection for public use products.

Regulatory, economic, fiscal and information measures

Permits

Operations of waste and chemicals management require an environmental permit approved by LEPA, and occupational safety and health related approvals including a fire safety permit. Through the environmental permit, legal aspects and demands concerning the environmental protection are addressed. Within the procedures of environmental permit, authorities involved in the decision-making process include water authority, public health department, air protection authority, Emergency Situation Inspectorate-fire brigade, depending on the character of the operation.

For new facilities, the process involves also the EIA procedure, and selected operations are subject to IPPC procedure, Seveso Directive provisions. All these procedures precede the construction permit stage. The construction permit holder prepares an operational plan, which is again subject to approval by relevant environmental authorities and those responsible for occupational safety and health. The operator is responsible for introduction and fulfilment of all provisions set within the permitting process, including health, safety and environment, monitoring frequency, parameters. Monitoring and reporting are done usually on annual basis, or more frequently upon authority requests, for example, LEPA on environmental aspects.

In addition, waste management operators of MSW collection and disposal systems under public utility services must obtain specific license from the National Romanian Regulator for Public Services for its operation. Operators ask for their license within 90 days after the commission for operation is signed. Applicants supply qualification documents, for instance: relevant contracts, local council decisions, environmental authorisations, financial and economic indicators, list of technical equipment they possess.

Taxes and fees

The landfill tax was applicable from January 2017 to June 2017. It was suspended due to the lack of related methodology. As a result, Romania does not apply a progressive waste disposal tax on majority of waste streams. In addition, hazardous waste disposal is not charged with extra disposal tax. To prevent merely re-selling waste, economic entities contribute of 2 per cent of the income realized from the sale of waste to the Environment Fund. Economic operators introducing dangerous substances on the national market pay a contribution of 2 per cent of substances value to the Environment Fund.

Besides these taxes, the substantial revenues contributing to the Environment Fund come from the penalties or charges, promoting recovery and recycling, which are applicable on the following items only if the applicable legal targets are not met: packaging, electrical and electronic equipment, portable batteries and accumulators, tyres and mineral oils. The GEO No. 74/2018 established “contributions for the circular economy” introducing the concept of the “extra” amount of waste which is computed from an average estimated MSW production of 233 kg per inhabitant per year in the urban area and 105 kg per inhabitant per year in the rural area. In January 2019 the price of the extra ton of waste was €8.3 per ton, and from 2020 onwards €22.2 per ton. These contributions are applicable for municipal waste deposited on landfills above the binding limit - per an extra ton of the waste deposited - and construction and demolition waste. In addition, an ecotax of €0.03 equivalent per piece is applied on the plastic shopping bags.

MSW tariff setting varies from municipality to municipality and between urban and rural areas. Its amount is not equal, for the tariff setting the methodology was issued by the Ministry of Environment, Waters and Forests and the National Romanian Regulator for Public Services. The MSW tariff setting has changed since 2012 and is subject to overall caution in terms of its affordability. NWMP introduces detailed analysis of costs linked to the
then planned development of integrated waste management systems assessed against affordability for each county individually. The affordability is calculated as 1.8 per cent of the available income of the population from the lowest income decile. The result is the maximum tariff per ton for each county (box 10.2). The difference between estimated costs for new infrastructure development and affordable amount is tens of per cent. Minimum tariffs were not set. Current tariffs can be so low because of substantial EU and national funds spent on investments. The calculation in the NWMP did not consider EU funds for future projections.

**Box 10.2: Waste tariff in Bistrita-Nasaud County**

To illustrate this situation, in 2019, the tariff setting in the Bistrita-Nasaud County (one SWIMS for whole county, one tariff for urban area and one for rural areas) for urban areas was €1.4 per person/month and in rural areas €0.45 per person/month, both with without VAT. For public institutions and economic operators, the tariff was €52.7 per ton. The recent general practice was that the private sector and institutions integrated to the MSW collection system used to pay higher tariffs, thus subsidizing the system.

Examples from other municipalities range from €1.26 to €2.57 per person/month in urban areas and €0.63–1.2 per person/month in rural areas. The tariff has not been collected satisfactorily; many people did not pay. The real practice in tariff setting is also a political issue. Thus, some municipalities did not collect any tariff from citizens at all hampering the principle of full cost recovery. Nevertheless, tariffs collected are still lower than are real costs for the system investments and operation. Although the system is based on the polluter pays principle, the municipal sector seems to benefit from systems on extended producer responsibility, companies and institutions involved in the MSW system and on funds from EU funds to infrastructure.

In comparison with the earlier practice, three possibilities of waste tariff collection scheme have been put in place:

- A contract between the waste collection operator and people/companies/public institutions;
- Municipality collects taxes and pays to waste collection operator;
- A combination – in one municipality for those people who do not have contracts signed with the operator, taxes must be established, paid to municipality, which then pays to the operator.

The operators of waste collection systems (either public or private) prepare the calculation of the tariffs using background data according to the National Romanian Regulator for Public Services’ methodology. The local councils analyse the calculation and approve the level of tariffs. Local councils on the municipality level have exclusive competences to establish, adjust and modify the tariffs and approve tariffs.

The new collection scheme does not guarantee that the waste tariff collection will increase and move closer to full-cost-recovery state. The introduction of contracts is enabled but not specifically supported by the current legal framework. Therefore, the Recommendation 8.2 of the second EPR of Romania asking the then Ministry of Environment and Forests, in cooperation with county councils and municipalities, to support and widely introduce contracts for municipal solid waste collection services between municipalities and collection companies, was not implemented.

The Recommendation 8.3 of the second EPR of Romania asking the Government to ensure that the competent authorities introduce waste tariffs based on the principle of full cost recovery, was not implemented.

**Awareness, education and training for sound management of waste and chemicals**

The 2014 study on Knowledge, attitudes and behaviour regarding waste management options in Romania: results from a school questionnaire revealed that the potential of recycling was well known to students, in contrast to understanding of waste management technologies concepts. Also, the separate collection habits were not generally practised, partly as a result of the lack of relevant infrastructure. According to the 2019 study on Community and School Education on the Subject of Waste Management: Experiences of Romania, it usually depends on motivation of particular teachers whether the topic is raised or not. Community education often aims at the basic topics. The education and awareness raising in waste management does not have a coordinated approach in Romania.
NGOs in Romania play a role in awareness raising at schools in private sector and civil society, promoting responsible behaviour and proper waste management habits. NGOs initiate or support education at schools, raise awareness in a private sector, assist in adopting the proper behavioural schemes, facilitate the technical and organizational aspects of collection system to waste management infrastructure available, spread the information on waste management issues; and organize the community activities, such as the clean-up of neighbourhood.

The Ministry of Environment, Waters and Forests, NEG, NEPA and LEPAs, and others also organise training campaigns on waste and chemicals issues for their own staff, for other institutions or for the public. The Environmental Fund launched the programme “Public awareness on waste management” which aims at granting funding for raising public awareness on separate collecting of various types of waste, such as packaging waste, WEEE, bulky waste, and construction and demolition waste.

10.7 Assessment, conclusions and recommendations

Assessment

As an EU Member State, Romania follows EU policies framing the waste and chemicals management. Due the evolving character of the EU environmental legislation and policy, the country has been pushed to additional tasks, causing numerous challenges for the Government, municipalities, companies and individuals. Despite these difficulties, Romania has managed to introduce many of the principles of the modern waste management system since 2012. Principles of prioritization of waste generation prevention and its re-use or recovery from disposal are anchored in the legal system, though its sound implementation remains to be addressed.

The policy framework resulting from Romania’s international commitments has been enacted on a national level. Within this process waste management legislation was adopted in reaction to approaching national deadlines or catching up with them or to avert impending infringement procedures. Low performance in some waste streams management can be attributed to the regulations not covering the whole lifecycle of waste, standards for end-of-waste status not only for the combustion sector waste and quality standards for product compost and enabling and facilitating provisions.

Institutional setting of municipal waste management shows some overlaps. Responsibilities of licensing waste management operations are split between LEPAs which issue the environmental permit and the National Romanian Regulator for Public Services that licenses operators of waste collection and disposal systems in municipal sector. Waste management agenda of the Regulator is in principle mergeable with agendas of the Ministry of Public Works, Development and Administration, NEG (enforcement of environmental law) and to municipalities (tariff setting, monitoring of operators). The local level administration staff is not yet fully prepared to manage the waste management agenda in a sound way.

With new and widening demands on administrative apparatus, human resources in Romania are getting tight. While human resources increased its competencies mainly on a national level, necessary capacities are still not met.

Although 20 SWIMS are functional and operated, rates of separate collection and recycling in municipal sector are low which would make slim reaching the global indicator 12.5.1 (national recycling rate, tons of material recycled). With subsidies linked to the introduction of the SWIMS, the natural market conditions for waste management market development were somehow disrupted and enabled the current low level of waste management tariffs which makes the market entry of the international waste management companies somewhat limited. This together with limited demand for industrial clients - industries usually operate their own waste management facilities, and only emerging demand for treatment of waste resulting from remediation of contaminated sites, and lack of other opportunities, indicate that the market might be lean for substantial foreign investments to waste management technologies and services.

Hence, the country seized the opportunity to introduce the key element of integrated waste management system i.e. motivating waste disposal tax applicable on all wastes disposed on landfills. Operators of waste management facilities for other than municipal waste are thus not motivated to invest in new waste management technologies or outsource waste management services via progressive and specialized waste management companies. Industries are not led on trajectory to invest in new technologies and operations resulting in lower quantities of
waste or more environmentally friendly materials and operations. All of this and the shortage of specific legal, policy and technical standards enabling alternative and economically viable solutions for prevention and utilization of waste result in waste management system undergoing the lengthy transitional process towards the integrated system.

To modernize the municipal waste management system, SWIMS were introduced and had a positive effect on the increase of coverage of urban and rural areas with waste collection services. Therefore, the progress can be made in achieving of the global target 11.6 through reporting on the global indicator 11.6.1 (Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities).

In terms of the global indicator 12.4.2 ((a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment), waste generated per capita has a decreasing trend, which results more from economy patterns than the effect of policy measures. Romania has not moved closer to the target on the amount and hazardous waste treated. The reason is the failure to establish motivating financial schemes and a landfill tax. Management of PCBs in the country does not have a focused institutional support.

Closure of operation of hundreds of non-compliant landfills and replacement of their capacities with compliant installations is a key achievement of Romania and pre-requisite for improvement of water management and quality and other environmental assets. To complete the commitment, these sites are not rehabilitated according to the Landfill Directive. This moved the country forward the SDG 6.

Management on contaminated sites, especially those resulting from former state-owned companies, is a long-term process. The strategy is in place as well as the first results. Investigation and inventory of the contaminated sites and potentially contaminated sites are the first steps taken under the strategy. The country approached the SDG 3. On the other hand, addressing all the liabilities might consume resources. During the privatization process, the Government missed the opportunity to utilize the money from privatization on environmental purposes. Regarding the investment needs for waste management infrastructure and contaminated sites (incl. mining waste objects and former non-compliant landfills), collection of landfill tax and bank guarantees for restoration of future waste management installations after their lifetime provides a practical solution to the future.

Waste coding system and statistical data collection and reporting to central, EU and international level have been put in practice with occasional delays in data delivery. Waste reporting schemes and obligations are not fulfilled consistently, lacking integration into a system enabling cross checking data. This results in inconsistency or data gaps in waste management data, for example, construction and demolition waste.

Romania has implemented the Recommendation 8.1 made by the second EPR of Romania asking the then Ministry of Environment and Forests and the Ministry of Administration and Interior to analyse possibilities to ensure full coverage of rural areas by waste collection services and draft a relevant plan of action, by developing in 2017 the NWMP that covers urban and rural areas of the entire country and integrates the concept of waste management systems. The Recommendation 8.2 about the introduction of contracts for municipal solid waste collection services between municipalities and collection companies is not implemented as the introduction of contracts was enabled, but not specifically supported by the current legal framework. Therefore, it remains valid. The Recommendation 8.3 asking the Government to ensure that the competent authorities introduce waste tariffs based on the principle of full cost recovery is not implemented. Also, the Recommendation 8.4 on the availability of detailed, verified background information for the development of a new integrated waste management strategy for the period 2014–2023 is not implemented and is still valid.

Conclusions and recommendations

Secondary legislation

With Romania’s membership of the EU, the waste management and chemical sector gained access to an advanced environmental policy and legal framework, smoothing the path towards sustainable development. To achieve its commitments at the international level, the country endorsed efficient policies on the municipal level. This required an enabling framework to be set up and its components to be harmonized and linked to specific targets. Should regulations miss specific and targeted provisions or provisions not be economically viable, consistent and interlinked with the other regulations, including cross-sectoral ones, their impact will miss its target.
Chapter 10: Waste and chemical management

Recommendation 10.1:
The ministry or ministries in charge of the environment, waters and forests should complete and implement waste-related regulations that undergo Regulatory Impact Assessment and be targeted and tailor-made to achieve high recycling rates and standards in the construction and demolition waste and wastewater treatment sludge sectors.

Solid waste integrated management systems

To modernize the municipal waste management system, Romania, with the support of EU funds, has been gradually introducing solid waste integrated management systems (SWIMS). These systems aim to streamline waste management at the county level and apply sustainable financial schemes. With the support of EU funds, the implementation of the SWIMS project started in 2007 and, since then, 32 of the 42 counties have taken part in the project. By 2019, up to 20 systems were fully functional and successfully operated. Remaining municipalities outsource sanitation services, which result in longer transportation distances and higher costs.

Recommendation 10.2:
The Government should encourage the remaining counties and Bucharest to implement and operate solid waste integrated management systems to substantially reduce the adverse impact of waste on human health and the environment and to achieve global SDG target 11.6 by 2030.

Landfill tax

As at December 2019, Romania does not have in place a landfill tax. One of the key prerequisites for the integrated waste management system is a healthy market environment together with motivating and discouraging policy instruments in place. The key instrument is a charge applied to all wastes landfilled. Provided that there is the necessary legal framework in place and law enforcement, preventing littering and dumping, this instrument triggers spontaneous market economy processes towards sustainable waste management, including chemical waste disposal, and invites international competition. This instrument would support the country’s efforts directed at fulfilling SDG 12 (ensure sustainable consumption and production patterns). The income stemming from the landfill tax to the state budget is a source that may be used for environmental protection purposes.

Recommendation 10.3:
The Government should introduce a comprehensive landfill tax, with a transitional period to announce and negotiate this intention to the public and for economic sectors to be able to make necessary arrangements, with a view to support the country’s efforts directed to fulfil SDG 12.

Liability for Contaminated Sites

The remediation of contaminated sites, which the country has set as priority under SDGs 3 and 6, made progress at the policymaking stage. The policy is aimed mostly at sites of former State enterprises that caused contamination of the environment. Some of the contaminated sites were privatized over the past 30 years. Because the early privatization contracts did not reflect on the emerging environmental standards in the 1990s, now the owners are responsible for contamination that does not originate from their activities and that was not adequately compensated in the privatization contracts.

Recommendation 10.4:
The Government should elaborate and implement programmes to remediate contamination caused by the State prior to privatization of enterprises and not addressed within privatization contracts, and act to rehabilitate the contaminated sites.

Municipal waste collection service tariffs

Current levels of waste collection service tariffs for citizens appear to be sustainable as they are affordable, mainly thanks to EU funding of the necessary infrastructure. In a long-term perspective there will be a need for infrastructure refurbishment, replacement, renewal and extension, but funds will not be available. Currently, citizens do not bear all the costs of the municipal solid waste management system. Direct participation and active contribution of citizens to the development of sustainable waste management system is a pre-condition to their
sense of its ownership. Therefore, waste management systems are aiming at a full-cost-recovery scheme. This includes waste collection service tariffs that are to be paid by citizens to cover all costs, but kept as low as possible by the implementation of all available measures to maximize incomes from, amongst others, waste sorting, recycling, material or energy use of waste and to minimize costs (e.g., waste prevention, separate collection and extended producer responsibility schemes).

**Recommendation 10.5:**
The Government should progressively adjust the waste collection tariff for citizens within a medium-term horizon so that it gets closer to a full-cost-recovery scheme, while preserving its affordability by taking into account the need to protect poor and vulnerable parts of the population.

**Waste management data quality**

Good quality, standardized data on waste management is a fundamental condition for monitoring, evaluation and planning of any waste management system on national, local and enterprise levels. No user-friendly and effective system of waste management data collection and reporting is applied in the country. Relevant institutions do not share a common database. Data are publicly available through annual reports published on the institutions’ websites, but an online database enabling systematic work with Eurostat quality data is not in place. Data on performance of development indicators are also needed. Reporting by waste generators is frequently conducted by untrained personnel. Moreover, Romania has been fulfilling its reporting obligation to EU incompletely, not supplying data reports or reports on the progress made towards the implementation of the targets (e.g., on waste electric and electronic equipment, waste batteries and accumulators and end-of-life-vehicles) of a quality compliant with EU reporting standards, or in timely manner.

**Recommendation 10.6:**
The Government should entrust the National Institute of Statistics and the National Environmental Protection Agency to ensure that waste management data are collected, enabling timely reporting to international institutions to the required reporting quality, and made publicly available in an online database.
Chapter 11

BIODIVERSITY AND PROTECTED AREAS

11.1 Trends in species and ecosystems

Species diversity

Romania is a country with rich biodiversity and a high percentage of natural ecosystems i.e. 47 per cent of the land area is covered with natural and semi-natural ecosystems. Romania possesses 5 of the 10 biogeographic regions officially recognized by the EU (alpine, continental, panonic, pontic, steppe), making it the most biogeographically diverse country of the EU. The high level of geographic diversity in Romania and the consequence of its location as a biological confluence place, has produced a rich flora and fauna diversity. The Fifth National Report to the Convention on Biological Diversity (CBD) in 2014 states that there are 3,795 species and subspecies of vascular plants, including 979 species of bryophytes, of which 4 species are hornworts, 217 liverworts and 758 mosses, 8,727 species of fungi, over 600 species of algae of which 35 are marine. The characteristic grassland species represent approximately 37 per cent of those which are in Romania. As far as fauna is concerned, a number of 33,802 species of animals have been identified so far, of which 33,085 are invertebrates and 717 vertebrates. Among vertebrates, 103 species of fish were identified, 19 species of amphibians, 23 species of reptiles, 364 species of birds (of which 312 are migratory species) and 102 species of mammals. As at December 2019, the sixth National Report, which covers the 2014–2018, is being finalized but it was not formally released.

In accordance with the European reporting document, Romania prepared its first report following the EU accession in 2013. The report was based on the general assessment matrix of the conservation status for species of Community interest. As a result, 608 reports were drawn up for 251 species, representing the conservation status. The conservation status, by groups of species, according to the data in the final report made on the basis of Art. 17 of the Habitats Directive, December 2013, is presented in table 11.1 and was not updated since.

<table>
<thead>
<tr>
<th>Species group</th>
<th>U2</th>
<th>U1</th>
<th>FV</th>
<th>XX</th>
<th>Not evaluated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants</td>
<td>7</td>
<td>44</td>
<td>40</td>
<td>2</td>
<td>0</td>
<td>93</td>
</tr>
<tr>
<td>Invertebrates</td>
<td>4</td>
<td>114</td>
<td>13</td>
<td>13</td>
<td>3</td>
<td>144</td>
</tr>
<tr>
<td>Fish</td>
<td>17</td>
<td>73</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>95</td>
</tr>
<tr>
<td>Amphibians</td>
<td>0</td>
<td>34</td>
<td>3</td>
<td>17</td>
<td>0</td>
<td>54</td>
</tr>
<tr>
<td>Reptiles</td>
<td>3</td>
<td>44</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td>Mammals</td>
<td>1</td>
<td>77</td>
<td>43</td>
<td>15</td>
<td>0</td>
<td>136</td>
</tr>
</tbody>
</table>


Note: U2: Unfavourable bad; U1: Unfavourable inadequate; FV: Favourable; X: Unknown.

The reporting on the basis of Article 12 of the Birds Directive was carried out at national level in 2020, and it took into account the distribution of species and their characteristics, such as migratory species and resident species.

On achieving the SDG target 2.5 (by 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed), measured by the global indicator 2.5.1 (number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities), a slight (8 per cent) increase was observed in the number of plant breeds for which sufficient genetic resources are stored, from 2010 until 2016, followed by a decrease of 17 per cent from 2016 to 2018 and an increase in 2019 (table 11.2).
Table 11.2: Plant breeds for which sufficient genetic resources are stored, 2010–2018, number

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>42,624</td>
<td>42,837</td>
<td>42,837</td>
<td>46,064</td>
<td>38,071</td>
<td>38,034</td>
<td>40,016</td>
</tr>
</tbody>
</table>

Source: FAO-WIEWS (http://fao.org/wiews) and EURISCO (http://eurisco.ipk-gatersleben.de)
Note: * Estimate based on the acquisition date of each conserved accession as reported in 2014.

No data on the global indicator 2.5.2 (proportion of local breeds classified as being at risk of extinction) are available to enable an assessment of the situation in the country. Romania made progress in this area through the National Rural Development Programme 2014–2020, under the framework of which farmers that are breeding pure-breed adult reproductive females of local breeds in danger of abandonment were compensated for the income forgone incurred as a result of assuming voluntary commitments over a 5-year period for package 8 - “breeding of farm animals of local breeds in danger of abandonment” within Measure 10 – “Agro-environment and climate” of the Programme. In the Package 8 on breeding farm animals of local breeds in danger of abandonment under the Measure 10, breeds belonging to five animal species were selected as they have a cultural and historical importance due to their age, but they have lost the economic competition with commercial breeds and without financial support are threatened by abandonment.

Based on the dynamics of the number of female reproductive animals of local breeds (recorded in the breeds genealogical registers) in the period 2008–2013, the list of local breeds in danger of abandonment in Romania and the corresponding danger (risk level), according to the Regulation (EU) No 807/2014 was established and certified. Livestock evolution for adult females of local breeds in danger of abandonment for which compensatory payments were granted through the Programme in the period 2015–2019 (table 11.3).

Table 11.3: Adult females from local breeds in danger of abandonment, 2015–2019, number

<table>
<thead>
<tr>
<th>Species</th>
<th>Breed</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>Târgie cu cap negru de Teleorman</td>
<td>3,382</td>
<td>3,954</td>
<td>3,968</td>
<td>2,256</td>
<td>2,161</td>
</tr>
<tr>
<td></td>
<td>Rațca (Valahă cu coarne în tîrbușon)</td>
<td>3,811</td>
<td>4,085</td>
<td>4,600</td>
<td>4,059</td>
<td>4,365</td>
</tr>
<tr>
<td></td>
<td>Karakul de Botoșani</td>
<td>2,761</td>
<td>3,093</td>
<td>3,476</td>
<td>4,156</td>
<td>7,633</td>
</tr>
<tr>
<td></td>
<td>Merinos de Suseni</td>
<td>300</td>
<td>300</td>
<td>303</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>Karakul de Botoșani</td>
<td>1,489</td>
<td>1,144</td>
<td>1,470</td>
<td>1,701</td>
<td>1,464</td>
</tr>
<tr>
<td></td>
<td>Merinos de Cluj</td>
<td>203</td>
<td>277</td>
<td>297</td>
<td>283</td>
<td>286</td>
</tr>
<tr>
<td></td>
<td>Merinos de Palas</td>
<td>1,452</td>
<td>5,813</td>
<td>4,124</td>
<td>3,335</td>
<td>3,433</td>
</tr>
<tr>
<td></td>
<td>Tîrgie - varietatea ruginie</td>
<td>802</td>
<td>947</td>
<td>1,045</td>
<td>1,223</td>
<td>1,691</td>
</tr>
<tr>
<td>Goats</td>
<td>Carpatina</td>
<td>3,171</td>
<td>529</td>
<td>529</td>
<td>351</td>
<td>561</td>
</tr>
<tr>
<td></td>
<td>Alba de Banat</td>
<td>960</td>
<td>345</td>
<td>345</td>
<td>612</td>
<td>345</td>
</tr>
<tr>
<td>Bovines</td>
<td>Sura de Sîpă</td>
<td>59</td>
<td>37</td>
<td>38</td>
<td>36</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Bivolul romanesc</td>
<td>194</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>93</td>
</tr>
<tr>
<td>Equidae</td>
<td>Shagya arabă</td>
<td>50</td>
<td>50</td>
<td>54</td>
<td>52</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Lipițan</td>
<td>209</td>
<td>184</td>
<td>161</td>
<td>174</td>
<td>163</td>
</tr>
<tr>
<td>Pigs</td>
<td>Bazna</td>
<td>22</td>
<td>22</td>
<td>38</td>
<td>49</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Mangalița</td>
<td>36</td>
<td>283</td>
<td>453</td>
<td>784</td>
<td>890</td>
</tr>
</tbody>
</table>


Romania has made progress in establishing legal, institutional and policy frameworks in achieving the SDG target 15.6 (promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed), measured by the global indicator 15.6.1 (number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits). Romania is Party to the International Treaty on Plant Genetic Resources for Food and Agriculture since 2012. Romania has adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits arising from utilization of genetic resources. Romania ratified the Nagoya Protocol in 2019. It shows a step towards achieving one of the objectives of the CBD to create a legal basis and greater transparency in support of users and providers of genetic resources.
Threatened species

According to the Fifth National Report to CBD, Romania has 3,795 plant species from which 5 species are extinct, 23 species have been declared natural monuments, 250 species are critically endangered, 100 species are endangered, and 157 species are vulnerable.

The National Red Lists are yet to be developed. As mentioned in the NBSAP, due to differing views within the Romanian academic community it was not possible to draft a normative act adopting national level red lists. The red lists of the various authors, which are not adopted by normative acts, are used in research surveys. Following the 2011 IUCN guidelines, the conservation status of bryophytes was assessed, and newly recorded species of mosses, hornworts and liverworts were added to the list. The check list and the Red List of bryophytes (mosses, liverworts, hornworts) were published in 2012 in the study on Checklist and Red List of Bryophytes of Romania. The previous list was developed in 2007 which identified 285 threatened species. The current Red List includes 374 threatened species (38 per cent of all bryophytes), among which 157 critically endangered, 113 endangered and 104 vulnerable species.

The 2019 global IUCN Red List contains records of 1,831 species, including 26 fungi, 534 plant and 1,271 animal species (table 11.4) in Romania, of which Critically Endangered (CR) are 18 animal species — 2 bird, 1 mammal, 8 fish, 5 insect and 2 mollusc species — and two plant species — Green Ash (Fraxinus pennsylvanica) and moss (Fruchtbares Schlafmoos). Two fish species — Danube delta gudgeon (Romanogobio antipai) and Techerghiol stickleback (Gasterosteus crenobiontus) — are Extinct (EX).

<table>
<thead>
<tr>
<th>EX</th>
<th>CR</th>
<th>EN</th>
<th>VU</th>
<th>NT or LR/nt</th>
<th>LC</th>
<th>DD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fungi</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>15</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plants</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>10</td>
<td>462</td>
<td>46</td>
<td>534</td>
</tr>
<tr>
<td>Animals</td>
<td>2</td>
<td>18</td>
<td>30</td>
<td>76</td>
<td>81</td>
<td>988</td>
<td>76</td>
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<tr>
<td>Total</td>
<td>2</td>
<td>20</td>
<td>39</td>
<td>89</td>
<td>94</td>
<td>1,465</td>
<td>122</td>
</tr>
</tbody>
</table>

Source: National Institute for Research and Development in Forestry “Marin Dracea”, 2019

Note: Extinct (EX), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT or LR/nt), Least Concern (LC) and Data Deficient (DD).

The Red List Index (indicator 15.5.1), based on the IUCN Red List of threatened species, has been adopted by the CBD as one of the indicators to measure progress towards reduction of the current rate of biodiversity loss at the global, regional and national levels and specifically to monitor changes in threat status of species. This indicator measures progress in achieving the SDG target 15.5 (take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species). The Red List Index value ranges from 1 (all species are categorized as ‘Least Concern’) to 0 (all species are categorized as ‘Extinct’). Romania keeps a stable momentum and a very slight upward trend has been observed i.e. the index has increased from 0.92913 in 2010 to 0.92976 in 2020. This means that the rate of species extinctions is abating or in other words the rate of biodiversity loss is decreasing.

According to the list of species included in the Appendices I, II and III of the CITES, valid as of November 2019, there are 170 species of wild fauna and flora from Romania listed in CITES Appendices (table 11.5).

Table 11.5: Species listed in CITES Appendices

<table>
<thead>
<tr>
<th>Mammals</th>
<th>Appendix I</th>
<th>Appendix II</th>
<th>Appendix III</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Reptiles</td>
<td>6</td>
<td>52</td>
<td>0</td>
<td>58</td>
</tr>
<tr>
<td>Amphibians</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Fish</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Invertebrates</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Fauna Total</td>
<td>10</td>
<td>72</td>
<td>1</td>
<td>83</td>
</tr>
<tr>
<td>Flora Total</td>
<td>0</td>
<td>87</td>
<td>0</td>
<td>87</td>
</tr>
<tr>
<td>Grand Total</td>
<td>10</td>
<td>159</td>
<td>1</td>
<td>170</td>
</tr>
</tbody>
</table>

Source: National Institute for Research and Development in Forestry, 2019
Following the EU Wildlife Trade Regulations (Council Regulation EC No 338/97 on the protection of species of wild fauna and flora by regulating trade therein), which go beyond the CITES with additional Annex D, species for which import levels are monitored and conditions of import are stricter than in CITES Appendix II-listed species (table 11.6). Annexes A, B, C are largely corresponding to the three Appendices of CITES but also contain some non-CITES species protected under EU internal legislation.

**Table 11.6: Species listed under the EU Regulation No 338/97**

<table>
<thead>
<tr>
<th></th>
<th>Annex A</th>
<th>Annex B</th>
<th>Annex C</th>
<th>Annex D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammals</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Birds</td>
<td>63</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>65</td>
</tr>
<tr>
<td>Reptiles</td>
<td>4</td>
<td>0</td>
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<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Amphibians</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Fish</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Invertebrates</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Fauna Total</strong></td>
<td>78</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td>90</td>
</tr>
<tr>
<td><strong>Flora Total</strong></td>
<td>2</td>
<td>85</td>
<td>0</td>
<td>6</td>
<td>93</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>80</td>
<td>96</td>
<td>1</td>
<td>6</td>
<td>183</td>
</tr>
</tbody>
</table>

Source: National Institute for Research and Development in Forestry “Marin Dracea”, 2019

Romania prepares triennial (previously biennial) national reporting to the CITES Convention and the last report for the period 2015–2017 was submitted in 2018. According to the analysis of EU Member State CITES biennial reports 2013–2014, it was noted that over the last six years some of the EU Member States appeared to have nearly, or more than, doubled the number of permits issued when comparing 2009–2010 and 2013–2014 figures, including Romania from 424 to 1,082 permits for mostly sturgeon caviar. In 2016, the Ministry of Environment (at that time) has put a ban on commercial fishing for Danube sturgeon (Acipenser gueldenstaedtii) until 2021 (Ministry Order No. 545/715/2016).

No data on traded wildlife that was poached or illicitly trafficked are available to be able to assess the state of affairs in achieving the SDG target 15.7 (take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products), and target 15.c (enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities), both of which measured by the global indicators 15.7.1 and 15.c.1 (proportion of traded wildlife that was poached or illicitly trafficked).

National action plans have been developed and approved for several species such as Brown Bear (Ursus arctos), Grey Wolf (Canis lupus), Ferruginous Duck (Aythya nyroca), the Small Cormorant (Phalacrocorax pygmaeus), Dalmatian Pelican (Pelecanus crispus), the Small Eagle (Aquila pomarina), and a Regional Action Plan for bat species management (Rhinolophus ferrumequinum, Rhinolophus hipposideros, Myotis myotis, Myotis oxygnathus, Myotis bechsteinii, Barbastella barbastellus, Miniopterus schreibersii), and sturgeon.

**Endemic species**

Romania’s biogeographical position with Carpathian Mountains and the Black Sea are reflected in a high level of endemic and sub-endemic species. As stated in the NBSAP for 2014–2020, more than 1,000 fauna species are considered endemic, but the geographical distribution of most of them is less known and no comprehensive documented information is available on the status of endemic species.

Some endemic fauna species include freshwater fishes: loaches Sabanejewia romanica and Sabanejewia vallachica, an extinct stickleback Gasterosteus crenobiontus, the Petzea rudd (Scardinius racovitzai), the sculpin-perch (Arges Sculpin), the Banat Sand Gudgeon, the Danube Delta Gudgeon (Romanogobio antipai), and a Critically Endangered endemic genus, the asprete or Romanian darter (Romanichthys valsanicola). The Danube Delta Dwarf Goby (Knipowitschia cameliae) is known only from the Danube Delta and the Black Sea.

From the group of insects, 227 species are adapted to the underground life, 97 per cent of these being endemic. Cave beetles unique to Romania include a ground beetle Clivina subterranea, a rove beetle Decumarellus sarbei, and the round fungus beetles Pholeuon comani and Sophrochaeta reitteri. Endemic invertebrates from Movile Cave include a water scorpion Nepa anopithalma, the spiders Agraeicina cristiani and Kryptonesticus...
georgescuae, the isopod crustaceans Armadillidium tabacarui and Trachelipus troglobius, an amphipod crustacean Niphargus dancai, a leech Haemopis caeca, and a snail Helobia dobrogica.

Other endemic snails include Cochlodina marisi, Bythinella sirbui, Alopia maciana, Mastus venerabilis, Agardhiella tunde, and Melanopsis parreyssi. Other endemic invertebrates include the bush crickets Isophya dobrogensis and Isophya dochia, the grasshoppers Zubovskyana banatica and Podismopsis transsylvanica, a ground beetle Carabus planicollis, a longhorned beetle Xestoleptura nigroflava, a click beetle Athous petromelae, a tortrix moth Dichrorampha carpatapina, picture-winged fly Otites kowarzi, a scorpion Euscorpius carpathicus, and the dwarf spiders Anguliphantes silli and Scutoplecopsis loricata.

More than 4 per cent of plant species are endemic (57 endemic taxa and 171 sub-endemic taxa). The endemic plant species include: the pinks Dianthus callizonus and Dianthus spiculifolius, the cornflowers Centaurea pugioniformis and Centaurea pinnatifida, a bellflower Campanula romanica, a larkspur Delphinium simonkaianum, the milk-vetches Astragalus peterfii and Astragalus roemeri, a whitlow-grass Draba dorneri, a mouse-ear chickweed Cerastium transsylvanicum, Cephalaria radiata, Andryala levitomentosa, Galium baillonii, the campions Lychnis nivalis and Silene dinarica, Thymus comosus, Ferula mikraskythiana, and a feather grass Stipa danubialis.

Widespread species

No data are available on the population numbers and trends of species widespread in the country.

Alien species

According to the 2017 study on Alien Species in Romania, there were 982 alien species reported in Romania. The most abundant group are plants with 490 species, followed by terrestrial animals with 390 species (of which 90 per cent are invertebrates), and aquatic organisms with 102 species (44 freshwater and 58 marine). Most alien species originate from North America and Southeast Asia and were introduced accidentally. From plant species, 59 per cent are ornamental that were deliberately introduced, and their distribution is along the Black Sea harbours and the Danube Delta. As further noted by the study, 112 species and clones of alien tree species were introduced by foresters. As for marine species, the largest group is represented by crustaceans and the majority originated from the Atlantic Ocean. The cumulative rate of introductions shows a steady increase in the number of alien species.

There is no national list of alien species. For the record and status of alien species, the Pan-European Inventory of Alien Species is used as a reference. No assessment on the status of species present in Romania and which are included in the Pan-European Inventory has been conducted. However, a European funds financed project is ongoing as at November 2020 and a national list of invasive alien species is expected to be adopted at the end of the project.

The invasive species can cause major losses of biodiversity, being able to lead in some cases to the elimination of native species that occupy the same ecological niche. When the species that disappear have economic interest, the loss of biodiversity is also accompanied by substantial economic losses. A series of management measures are considered at national level aimed at the prevention, early detection and response, and management of naturalised species.

At the national level, a series of research programmes were conducted including the Monitoring System and Rapid Detection of Invasive Species and the Identification of invasive alien plants and potentially invasive alien plants in Romania and the impact assessment on natural and seminatural habitats in order to initiate the measures of prevention and control. The research programmes triggered publications on alien species and signalled a need to improve legislative framework.

Ecosystems

Forests
As at 31 December 2019, forests covered 6,583,100 ha, representing 27.6 per cent of the total territory of the country (compared with 6,529,100 ha in or 27.3 per cent in 2012). Afforestation shows a decreasing trend from 11,026 ha in 2012 to 9,071 ha in 2018. Broadleaved trees are dominant in Romanian forest, which equals to 70 per cent of total forestland area. There is slight increasing trend in coniferous tree forests from 1,744,700 ha in 2012 to 1,917,500 ha in 2018. The European Beech (*Fagus sylvatica*) and Norway spruce (*Picea abies*) are the most dominant tree species.

The second cycle forest inventory for the period 2014–2017 was completed in 2018–2019. The inventory results show that the forest coverage has increased since the first cycle inventory for the period 2008–2012. The natural regeneration rate is stable.

Native steppe and steppe-associated wet meadows have been systematically converted to cropland and pastures. The extent of loss of steppe is not thoroughly documented, however less than 10 per cent remains of some types of grassland and shallow marsh ecosystems that were once common in Romania, and there is an obvious trend of desertification on 20 per cent of the total arable land.

Through the research projects “Romanian forest ecosystem status - assessment and analysing in Level I and Level II monitoring networks”, and “Long-term dynamics of the status of representative forest ecosystems from protected areas (Long-Term Ecological Research (LTER) Rezatet, Bucegi-Piatra Craiului and Lunca Mureșului Natural Park sites)” financed by the Romanian Ministry of Research and Innovation, and under the coordination of the National Institute for Research and Development in Forestry, annual assessments of vegetation biodiversity and forests health status are conducted. The research areas are located in representative forests ecosystems for Romania (International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests) and LTER Networks). Thirty sites are monitored for air pollution impact

The forest condition survey in Romania was carried out in 2018. From the total number of 5,832 assessed trees, in 245 permanent plots, 1,051 trees were conifers (18 per cent) and 4,781 broadleaves (82 per cent). The field assessment recorded damages, particularly defoliation and discolouration of the foliage of the crown. The overall share of damaged trees (defoliation classes 2–4) was 13.7 per cent, which is 0.5 per cent lower than in 2017 but still higher than in the period of 2013–2016.

Overall, the results of the evaluations carried out during 2013–2018 indicate that the condition of forest health in Romania, evaluated within the pan-European network of permanent surveys, is relatively constant with differences insignificant from year to year in terms of percentage of trees with a defoliation of the crown higher than 25 per cent (damaged trees), which at the level of the year 2013 registered a value of 12.9 per cent, with 0.8 per cent lower than in 2018 (13.7 per cent).

The country is taking measures to conserve and restore forests. The forest area as a proportion of total land area increased from 28.32 per cent in 2010 to 30.12 per cent in 2016, i.e., by 1.8 per cent, and as of 2020 remains at the same level (global indicator 15.1.1 (forest area as a proportion of total land area) is used to measure the achievement of the SDG target 15.1 (by 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements)).

**Mountains**

Romania gives priority to the conservation and sustainable use of biological diversity in mountain ecosystems, which support the achievement of the target 15.4 (by 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development). The assessment of direct and underlying causes of degradation and loss of biological diversity of mountain ecosystems were done before elaborating the management plans of the natural protected areas from the mountain regions. Such assessment was made for the national and natural parks and Natura 2000 sites with administration units. The main threats for the mountain ecosystems are overgrazing, grazing, forest exploitation, hunting, unsustainable tourism, mining activities and the natural hazards. The overgrazing and grazing lead to a reduction in the number of plant species and, indirectly, to the disappearance of the invertebrate species that use them as a food source or shelter. No enough funding is available to carry out the activities for conservation and sustainable use of biological diversity in mountain ecosystems.
No data are available on the coverage by protected areas of important sites for mountain biodiversity (indicator 15.4.1). One of the Romanian principal targets is to grow the contribution of state forests on the improvement of environmental conditions and to deliver to the national economy timber and other specific products with economic efficiency.

The “Mountain Green Cover Index” measures changes of the green vegetation in mountain areas (forest, shrubs, trees, pastureland and crop land) to provide an indication of the status of conservation of their environment. Romania applied the ecosystem approach in the conservation and sustainable use of biodiversity in the mountain ecosystems. Romania adhered to the Carpathian Ecoregion Initiative, which aims the conservation and sustainable use of Carpathians. Through this initiative the conservation measures are combined with actions targeted on supporting the local economy and culture. The management plans of national and natural parks include conservation measures for species and habitats. Some measures have taken to protect the traditional knowledge, innovations and practices of local communities for conservation and sustainable use of biological diversity in mountain ecosystems. Romania developed programmes for the protection of natural and cultural heritages in the mountains. Romania reported in 2017 96.83 per cent for the Mountain Green Cover Index (indicator 15.4.2).

**Marine and coastal**

The Black Sea bioregion includes not only the coastal platform but also the Romanian territorial waters plus the exclusive economic area, under the Marine Strategy Framework Directive.

**Valuation of ecosystems and ecosystem services**

Romania has launched the Mapping and Assessing Ecosystems and their Services (MAES) process in March 2015 with the implementation of the project “Demonstrating and promoting natural values to support decision-making in Romania”. The successful implementation of the project’s first expected outcome “awareness, education on biodiversity and ecosystem services, the link between biodiversity and climate change as well as economic assessment of ecosystems” and the development of a national database of ecosystems and their services was ensured through the priority programme BIODIV of the Financial Mechanism of the European Economic Area and the Norwegian financial mechanism.

The project helped to identify the natural capital in Romania to be managed in a way conducive to effective decision-making in that area. The result was a collection of maps of ecosystems and ecosystem services, a national ecosystem and services assessment report, an information system integrated to the Integrated Environmental Information System of NEPA that is expected to function as a national database of ecosystems and of their services, highlighting the key ecosystems that need better-oriented policies. This project made it possible for Romania to play a leading role among the Balkan countries by implementing the mapping process and evaluating ecosystem services.

The implementation of the Recommendation 9.4 (b) in the second EPR of Romania asking the Ministry of Environment and Forests (at that time) to carry out a national valuation of ecosystems and ecosystem services with the assistance of the European Union and other interested donors and institutions, was implemented through the MAES.

### 11.2 Pressures on species and ecosystems

**Land uptake and habitat fragmentation**

According to the Ministry of Environment, Waters and Forests, the main pressure and threat for biodiversity in the Natura 2000 sites are related to the land use change. At the level of Natura 2000 sites, 54.4 per cent of the area of Sites of Community Interest and 40.3 per cent of the area of Special Protection Areas are occupied by forests. After the inclusion of forest areas in the Natura 2000 network, the owners had to adapt their forest activities management, in particular by integrating and taking into consideration the conservation objectives of

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natural habitats and species of flora and fauna of conservative interest. This meant a reorientation towards biodiversity conservation, rather than forest production.

The forest areas are followed by areas with shrub vegetation and grasslands (18.5 per cent in Sites of Community Interest and 19.8 per cent for Special Protection Areas). In these areas, pastoral use has a high conflict potential with conservation activities. This is also the case for arable land (5.4 per cent in Sites of Community Interest and 14.5 per cent in Special Protection Areas) where the diversity of owners and the small size of the properties make it difficult to reconcile conservation objectives with those of production.

Other sectors, such as transport (development of highway, railway, fluvial and maritime infrastructure and obsolete fleet), construction (large agglomerations of houses but also isolated houses, including illegal residential houses), mining (rock, gravel and sand extraction, including from riverbeds and open pit) and energy (coal, oil, wind farms and thermal water exploitations) put pressure on species and the ecosystems mainly by up taking land, fragmenting habitats and by polluting air, water and soil.

**Development of energy installations and infrastructure**

The large capacity Iron Gates Hydroelectric Power Station has a major negative impact on the migratory fish species, which has the reproduction places upstream of these areas, reducing by 50 times the numbers of sturgeons. After 1990 the number of installed hydropower plants decreased, by 2010. About 54 per cent of Romania's hydropower potential is now arranged, and there are plans to reach 63.5 per cent by 2025.

The hydropower development planning, which was done almost 40 years ago requires to be revised, including by introducing assessment and modelling that take into account the nexus aspects such as benefits and trade-offs between water, energy and ecosystems. In particular, for hydropower stations on the Danube, the shore dams could lead to the destruction of reproductive areas for the species of fish such as the carp, the result being the reduction of 10 times of its numbers.

**Industry**

No studies are carried out to measure the impact of industries to biodiversity. Fast industrialization through the development of production infrastructure in large units, mostly in the sectors of ferrous and non-ferrous metallurgy, chemical and petrochemical industry, machine manufacturing, caused the consumption increase of non-renewable sources (mineral and energetic) from autochthonous and external sources, massively contributing to the pollution of air, surface and underground waters and soil. The direct and indirect pollution caused by the production from large industries, including that of concrete, chemical fertilizers and pesticides, exacerbates environmental conditions.

**Logging and illegal logging**

As confirmed by the Ministry of Environment, Waters and Forests based on the results of the second National Forest Inventory (2014–2017), 38.6 million m$^3$ of wood are harvested each year in Romania out of which 20.6 million m$^3$ is illegally logged mostly in privately-owned forests. The volume of illegal logging has increased more than double compare to the first National Forest Inventory (2008–2012), which estimated 8.8 million m$^3$ of illegally cut trees annually. These figures are challenged by NGOs. However, the Academy of Agricultural Sciences and Silviculture presented a point of view that challenges the veracity of the figures and demonstrates the errors generated by these results.

There is no official confirmation and documentation that the illegal logging happens in the core zone of national parks including the World Heritage Sites. Wood felling occurred (one forest stand) in the buffer zone of Domogled – Valea Cernei National Park in the adjacent area of the site property, being legal and applied according to the forest management plan. Though not included in the World Heritage site, some adjacent forests also have many more primary forests stands.

**Acidification**

136 https://wwf.panda.org/wwf_news/?357022/debated-nfi
As noted in the State of the Environment Report of Romania for 2018, in recent decades, in several forest areas, pollution has increased, greatly affecting the tree health condition and their ability to regeneration. Industrial pollution, both domestic and transboundary, generates acid rain which resulted from industrial development such as manufacturing of construction materials (cement, ballast, etc.).

**Eutrophication**

No data or studies on the impact of eutrophication are available in the country.

**Desertification**

The EU report on “Combating desertification in the EU: a growing threat in need of more action” from 2018 indicates that the desertification will pose significant problem and its effects will be particularly acute in several countries in the EU, including the areas bordering the Black Sea in Romania. According to the models used by the EC on climate change, the risk of desertification will be high in the Danube Delta.

The Seventh National Communication on Climate Change published December 2017 indicated that the area subject to desertification, characterised by an arid, semi-arid or subhumid-dry climate, was approximately 30 per cent of the total area of Romania, being largely situated in Dobrogea, Moldavia, the south of the Romanian Plain and the Western Plain. These areas are mostly used for agriculture and water resources.

**Intensified agriculture**

Romania has 15 million hectares of farmland, of which more than 9 million hectares devoted to arable crops. About 66 per cent of the territory is taken by agriculture and 46 per cent of population lives in rural regions. The farm structure in Romania is dominated by small, subsistence and semi-subsistence family farms which are small (approximately 3.66 ha per farm). Excessive fragmentation of agricultural land, degradation of productive services for agriculture and quality degradation are leading to an increased land vulnerability to extreme climatic phenomena and a lower adaptation capacity.

In the 1980s the draining of wetlands was promoted in order to create arable land for agriculture. A total of about 400,000 hectares of wetland habit, much of it along the Danube River and in the Danube Delta (about 80,000 ha), has been permanently or partially lost as it was converted to agricultural use. In the Danube Delta, alluvial plains were dammed up and transformed in intensive agricultural ecosystems in proportion of 20–80 per cent thus a large part of the pastures with steppe vegetation and lands with excessive humidity were transformed in arable lands. Furthermore, the shelter belts and many forest parts from the plain area or river plains were cleared. With the designation of Natura 2000 sites combined with the projects implemented with EU funding some of these areas in the past decade have been recovered into the natural wetland state and reconnected to the region’s network of channels and lakes. However, as indicated in the Fifth National Report to CBD, the drainage of wet meadows and change to arable land or grazing meadows were still practiced and even with the support from the Environment Fund.

The continuous deterioration of grasslands has been caused by increasing the number of grazing animals without consideration to the carrying capacity or organization of grazing cycles and rotations. An assessment from 2019 on the grazing livestock density and carrying capacity that covered an area of 34,000 km² (3.3 million ha) within and outside of Natura 2000 sites indicates that more than half of the assessed area is subject to major degradation and overgrazing. Overgrazing causes decrease of vegetal biomass and number of species with nutritional value.

According to the 2019 study “Deviation from Grazing Optimum in the Grassland Habitats of Romania Within and Outside the Natura 2000 Network”, of the national grassland area, 17.34 per cent is under the designation of Natura 2000 sites, which indicates the overlapping of agricultural and nature protection activities. Therefore, it implies that some parts of the Natura 2000 suffer from pasture degradation and overgrazing, which affects negatively the biodiversity and ecosystems. The grazing and forestry activities are identified as the most frequently occurring threat in the territory of Natura 2000 sites, followed by hunting and urbanization i.e. construction of housing and expansion of urban areas (Table 11.7).
Table 11.7: Annual average frequency of threats in Natura 2000 sites in Romania

<table>
<thead>
<tr>
<th>Threat</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazing</td>
<td>247</td>
</tr>
<tr>
<td>Forestry activities</td>
<td>247</td>
</tr>
<tr>
<td>Hunting</td>
<td>189</td>
</tr>
<tr>
<td>Urbanized areas, human housing</td>
<td>151</td>
</tr>
<tr>
<td>Traps, poisoning, poaching</td>
<td>146</td>
</tr>
<tr>
<td>Roads, highways</td>
<td>141</td>
</tr>
<tr>
<td>Household waste/wastes from recreational bases</td>
<td>138</td>
</tr>
<tr>
<td>Forestry exploitation without replanting or natural cultivation</td>
<td>107</td>
</tr>
<tr>
<td>Cultivation</td>
<td>102</td>
</tr>
<tr>
<td>Use of biocidal products, hormones and chemicals</td>
<td>72</td>
</tr>
<tr>
<td>Removal of dry or drying trees</td>
<td>71</td>
</tr>
<tr>
<td>Pollution of surface waters (terrestrial, marine and brackish)</td>
<td>69</td>
</tr>
<tr>
<td>Forest clearance</td>
<td>67</td>
</tr>
<tr>
<td>Fire and combating fire</td>
<td>62</td>
</tr>
<tr>
<td>Erosion</td>
<td>58</td>
</tr>
<tr>
<td>Motor vehicles</td>
<td>57</td>
</tr>
<tr>
<td>Mowing/cutting of pastures</td>
<td>56</td>
</tr>
<tr>
<td>Sand and gravel exploitation</td>
<td>53</td>
</tr>
<tr>
<td>Livestock breeding</td>
<td>52</td>
</tr>
<tr>
<td>Sand and gravel extraction</td>
<td>51</td>
</tr>
<tr>
<td>Other impacts caused by tourism and recreation not mentioned above</td>
<td>50</td>
</tr>
</tbody>
</table>


In addition to the above, the Fifth National Report to the CBD indicated further the following problems:

- Afforestation of grasslands with low productivity and of steppe habitats, sometimes considered by the authorities as “degraded” land;
- Destruction of shrub vegetation for extending the areas of pasture or for the purpose of developing tourism;
- Ploughing of natural grasslands for the expansion of arable land;
- Abandoning meadows and pastures, especially in the hardest-to-reach areas, which will be invaded by forest vegetation.

Although the change of different types of habitats into monocrop farmlands are not widely practices anymore, in areas such as Dobrogea or Bărăgan monocultures and intensive agricultural activities still prevail and this has led to the destruction of landscape and grassland habitats, with a negative impact on species.

Land degradation

According to the United Nations statistics, Romania reported for the indicator 15.3.1 (proportion of land that is degraded over total land area), that 2 per cent of the total land was degraded as estimated in 2018 first time for the period of 2000–2015. The next cycle of reporting will cover subsequent four years i.e. 2019–2022 and the report is expected to be published in 2023. Therefore, in the absence of adequate data for comparison it is hard to assess the progress in achievement of the target 15.3 (by 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world).

Hunting and fishing

About 92 per cent of the total territory of Romania is under the hunting fund (21,966,355 out of 23,839,700 ha). The hunting fund is further divided into 2,151 hunting grounds that are managed by private-owned or state-owned forestry units and hunting associations. Romsilva is managing 243 hunting grounds on a contract basis with the Ministry of Environment, Waters and Forests. Hunting in Romania is permitted for 18 species of mammals and 39 species of birds. According to the Law in Hunting and protection of cinegetic fund (No.407/2006), the main game species are European hare (Lepus europaeus Pallas), red deer (Cervus elaphus L.), common pheasant (Phasianus colchicus L.), European roe deer (Capreolus capreolus L.), wild boar (Sus scrofa L.), fallow deer (Dama dama L.), pheasants, quails, geese, ducks, etc.
Following the accession of Romania to the European Union and the adoption of the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, starting from 2007 on the basis of MOs, derogations for three species namely brown bear (*Ursus arctos*), grey wolf (*Canis lupus*) and wildcat (*Felis silvestris*) were approved. Between 2007–2015, the hunting was permitted for a total of 12,169 animals (Table 11.8).

**Table 11.8: Hunting quotas for brown bear, grey wolf and wildcat, 2011–2015, number**

<table>
<thead>
<tr>
<th></th>
<th>Brown bear</th>
<th>Grey wolf</th>
<th>Wildcat</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>365</td>
<td>498</td>
<td>402</td>
</tr>
<tr>
<td>2012</td>
<td>365</td>
<td>520</td>
<td>430</td>
</tr>
<tr>
<td>2013</td>
<td>436</td>
<td>495</td>
<td>420</td>
</tr>
<tr>
<td>2014</td>
<td>550</td>
<td>520</td>
<td>440</td>
</tr>
<tr>
<td>2015</td>
<td>540</td>
<td>598</td>
<td>460</td>
</tr>
<tr>
<td>Total</td>
<td>3,636</td>
<td>4,552</td>
<td>3,981</td>
</tr>
</tbody>
</table>

*Source: Enescu.C., Aureliu-Florin. H, 2017*

Since 2016, the Government decided not to issue preventive hunting quota for brown bear and grey wolf. This has led to enormous human wildlife conflicts in Romania. In 2017 and 2018, the yearly quota was lower than in the previous years and was issued mostly as response measure to hunt in the areas/counties, where the attack on humans and domestic livestock were registered. In 2019, three human lives were lost due to bear attacks.

Following the GO No. 1679/2008, LEPAs register damages by bears and wolves and prepare together with forest guard the reporting to the Biodiversity Directorate of the Ministry of Environment, Waters and Forests and the CITES Management Authority. Thereafter, the Economic and Financial Directorate of the Ministry of Environment, Waters and Forests pays compensation from the Ministry budget for persons who were attacked or whose properties were damaged.

In Brasov County alone, 150 cases were reported in 2019. In April 2019, the assessment of large carnivores was carried out and estimated 1,287 brown bears in Brasov. The optimum number should be 338.

To improve the management of large carnivore populations, the Ministry of Environment, Waters and Forests has developed action plans for brown bears and grey wolves through consultative process with various stakeholders.

The Piatra Craiului National Park Administration indicated several factors vis-à-vis brown bear issues, such as bears getting accustomed to feeding by people and thus descending closer to settlements to look for food, including in domestic waste containers. In the past, hunting units were putting feeding at designated sites. Bear attacks are also triggered by the disturbing human attitude towards them such as taking pictures.

Warm climate affects the brown bear living pattern i.e. hibernation period which is now delayed and shortened by the longer autumn season.

A survey on brown bear population was conducted by the Park Administrations. The currently available data estimates the population of 6,000 brown bears, but the data seem inaccurate as many stakeholders do not agree with the number.

Fish poaching takes places along the Danube and other rivers, and from the Danube Delta. From the methods used, the most dangerous one is electric fishing, which, besides the fact that it destroys a significant number of young specimens, it causes the sterility of mature specimens that survive. Illegal fishing is still a problem, affecting both the fish populations and nearby communities. NGOs have been started campaign to stop poaching in the country.

**Collection of non-wood forest products**

Data from 2012–2018 show a decrease in the quantity of collected non-wood forest products, expect for other non-wood products and beekeeping product” have increased (table 11.9). There is no specific study or monitoring with a focus on the impact of the collection of non-wood forest products on biodiversity and ecosystems. In
addition, there is no clear explanation for the reduction in the quantity of collection over the past years. This could be either the results of overharvesting or due to other factors such as weather change or drought.

### Table 11.9: Collection and production of non-wood forest products, 2012–2018

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest and ornamental nursery seedlings (1,000)</td>
<td>25,490.9</td>
<td>24,873.9</td>
<td>17,880</td>
<td>15,166.2</td>
<td>13,631</td>
<td>10,476.6</td>
<td>8,986</td>
<td>35</td>
</tr>
<tr>
<td>Other wood products (1,000 lei)</td>
<td>3,260.6</td>
<td>2,820.2</td>
<td>2,697.3</td>
<td>2,702.1</td>
<td>1,728.7</td>
<td>1,186.6</td>
<td>1,050.3</td>
<td>32</td>
</tr>
<tr>
<td>Forest seeds (tons)</td>
<td>21.7</td>
<td>12.3</td>
<td>11</td>
<td>7.3</td>
<td>7.6</td>
<td>8.7</td>
<td>17.2</td>
<td>79</td>
</tr>
<tr>
<td>Berry species (Rubus idaeus, Vaccinium myrtillus, Rubus caesius) (tons)</td>
<td>4,471.4</td>
<td>5,397.5</td>
<td>3,908.7</td>
<td>3,481.9</td>
<td>2,442.4</td>
<td>3,182.7</td>
<td>3,103.5</td>
<td>69</td>
</tr>
<tr>
<td>Truffles and other edible mushrooms from the spontaneous flora (tons)</td>
<td>771</td>
<td>608.8</td>
<td>521.4</td>
<td>542.7</td>
<td>460.7</td>
<td>495</td>
<td>523.2</td>
<td>68</td>
</tr>
<tr>
<td>Other non-wood products (1,000 lei)</td>
<td>2,957.8</td>
<td>4,642.2</td>
<td>3,447.8</td>
<td>3,246.7</td>
<td>2,789.6</td>
<td>3,256.1</td>
<td>5,845.4</td>
<td>189</td>
</tr>
<tr>
<td>Hunting products (1,000 lei)</td>
<td>6,376.7</td>
<td>5,709</td>
<td>6,997.7</td>
<td>5,903.4</td>
<td>5,229.1</td>
<td>5,170.2</td>
<td>5,040</td>
<td>79</td>
</tr>
<tr>
<td>Fishing products (1,000 lei)</td>
<td>8,301.5</td>
<td>9,329.8</td>
<td>10,478.1</td>
<td>11,093.8</td>
<td>8,992.9</td>
<td>9,060.9</td>
<td>8,607</td>
<td>104</td>
</tr>
<tr>
<td>Beekeeping products (honey) (1,000 lei)</td>
<td>43.3</td>
<td>36.6</td>
<td>28.7</td>
<td>9.9</td>
<td>39.5</td>
<td>63.7</td>
<td>97.3</td>
<td>225</td>
</tr>
<tr>
<td>Other sales (1,000 lei)</td>
<td>261,218</td>
<td>46,087.2</td>
<td>56,607.4</td>
<td>48,433.3</td>
<td>27,961.4</td>
<td>5,767.8</td>
<td>8,658.5</td>
<td>33</td>
</tr>
</tbody>
</table>


### Tourism and leisure

In Romania, the number of local tourists is steadily increasing in contrary to the foreign tourists whose number remains stable in recent years. Between 2012 and 2019 the number of foreign tourists has increased by 61.5 per cent i.e. from 7.9 million to 12.8 million, whereas between the same period the number of Romanian tourists taking part in internal tourist actions has increased by 155 per cent i.e. from 0.4 million to 1.1 million. This is linked to the promotion of local tourism through adoption of the Law No. 94/2014 and implementation of the national programme on holiday vouchers for public employees. Local tourists mostly visit national natural protected areas for hiking, kayaking and birdwatching.

For instance, DDBRA was visited by more Romanians than foreigners and the number of tourists is increasing (table 11.10).

### Table 11.10: Tourists visited the Danube Delta Biosphere Reserve, 2015–2019, number

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>50,741</td>
<td>52,325</td>
<td>73,279</td>
<td>70,772</td>
<td>70,939</td>
</tr>
<tr>
<td>Foreigners</td>
<td>36,950</td>
<td>22,097</td>
<td>18,223</td>
<td>21,782</td>
<td>36,880</td>
</tr>
<tr>
<td>Total</td>
<td>87,691</td>
<td>74,332</td>
<td>91,502</td>
<td>92,554</td>
<td>107,819</td>
</tr>
</tbody>
</table>

Source: DDBRA, 2020

A very important pressure is exercised on biodiversity in natural protected areas situated in coastal and mountain areas from constructions of seasonal facilities in addition to residential constructions.

DDBRA conducted a study on the evaluation of the carrying capacity for tourism (hotels, boats, camping sites). A set of recommendations was proposed to be applied with taking into account ecological, socio-economic and visitor capacity. To minimize the negative impact of tourism on the environment, a “slow tourism” is promoted. Furthermore, the study recommends to developing a recreation and tourism zoning model of protected areas.

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137 An alternative tourism form, slow travel is typically associated with sustainable practices, taking into consideration the impacts of travel on the environment, society and economy. [https://tourismteacher.com/slow-tourism/](https://tourismteacher.com/slow-tourism/)
Climate change

The Seventh National Communication on Climate Change and First Biennial Report identified several threats of climate change on biodiversity such as: modifications of the species behaviour as a result of the stress induced on their adaptation strategy (e.g., shorter hibernation period); modification of the habitats distribution and composition as a result of the changes in the species structure; increased invasion of exotic species at the level of the natural habitats and their potential to become invasive, threats to wild animals, especially in low-moving capacity and/or with low population species, due to increased forest fire risk in the Carpathian Mountains and extinction of certain species of fauna and flora.

Climate change also results in drying of trees. Frequent weather events in recent years such as early and late frosts and in some years, droughts weaken young trees and they become susceptible to insects’ attacks.

Use of GMOs

In Romania, no GMOs have been cultivated for the last five years, and for GMO crops prior to 2015, following the monitoring and post-monitoring process, no negative effects on human health and the environment (species and ecosystems) were observed. According to the national legislation, no GMOs are cultivated in natural protected areas. Monitoring of GMOs is carried out by the companies that cultivate GMOs and the assessment of the impact is done through the questionnaire developed by EU standard reporting formats for presenting the monitoring results of the deliberate release into the environment of genetically modified organisms or in products for the purpose of placing on the market.

In 2019 one site for testing was registered (for plum plantation). The NEPA’s website contains detailed information on the cultivated site between 2007–2015.

11.3 Performance and gaps in biodiversity and forests monitoring networks

Romania does not have a holistic system and developed methodology for biodiversity monitoring. No standard guidelines on monitoring protocols and unitary methodologies for monitoring the conservation status of species and habitats of community interest, and standard guideline for the monitoring of the bird species of community interest in accordance with the provisions of the Habitats Directive and Birds Directive respectively are approved. Moreover, the methodology for monitoring has not yet been developed and monitoring is conducted individually at each protected area following their own monitoring methodology.

Species

To improve the reporting under the Habitat and Bird Directives and monitoring of species, several projects have been developed and implemented at national level:

- Monitoring of the conservation status of species and habitats in Romania under Article 17 of the Habitats Directive (2011–2015) led by the Institute of Biology, Romanian Academy of Sciences;
- Completing the level of knowledge of biodiversity by implementing the system of monitoring the state of conservation of species and habitats of community interest in Romania and reporting under Article 17 of the Habitats Directive / EEC-SMIS 120009 (FEDR) led by the Ministry of Environment (at that time);
- Ecological corridor for habitats and species in Romania (COREHABS) developed between 2015–2017 by University Transilvania Braşov in partnership with five other institutions, including the National Institute for Research and Development in Forestry (financed by the European Economic Space (SEE) 2009–2014). The project supported identification, analysis and promotion of ecological corridors at national, regional and local level by using modern spatial analysis. This project developed methodologies for establishing ecological corridors (designation criteria), identifying critical areas, and provided trainings of specialists for better management and monitoring (http://corehabs.ro/en/).

The Wildlife Department of the National Institute for Research and Development in Forestry is engaged in LIFE project COREHABS on ecological corridors with a focus on bear as umbrella species. LIFE for bear project implements several activities such as to make anti-bear trash bins, relocate bears and conduct monitoring for bears
by installing tacking collar on bears. However, the results from collaring was partially satisfactory as some collars were lost and could not transmit data on location and the monitoring was not complete.

The National Institute for Research and Development in Forestry in partnership with Ministry of Environment and other 4 entities between 2015–2020 developed the Project Conservation of Brown Bear population in Romania (LIFE FOR BEAR) - LIFE 13 NAT/RO/001154 (LIFE programme). The project main objectives are: updating the brown bear population management plan in Romania to the new socio-economic environment; enhancement of brown bear population conservation status in the conflict area Brașov - Valea Prahovei; developing innovative techniques for bear population management and conservation and transferring good practice techniques to the stakeholder and improvement of local and national stakeholders attitude (http://forbear.icaswildlife.ro/en/). The action plan for the conservation of brown bear population from Romania elaborated as result of activities developed by this project, was approved by the Ministry of Environment (at that time) and enacted in 2018.

Natural protected areas

As at December 2019 the monitoring is done on a voluntary basis. Before the creation of NANPA, the Institute of Biology was responsible to report and monitor under the Habitats Directive. Now the reporting responsibilities has been shifted to NANPA, who has very limited capacity to undertake this work. Full scale monitoring of all protected areas managed by NANPA is expected to be in place once the recruitment of staff at all territorial units is completed.

In natural protected areas managed by Romsilva, every park administration has a 5-year monitoring plan, which is part of the management plan of natural protected areas. It contains information on the list of species and habitats to be monitored, monitoring protocols of flora, fauna and habitats, frequency of monitoring reports, persons responsible for the implementation of the monitoring plan.

The monitoring data on species and habitats are entered in the GIS database (table 11.11). Based on the monitoring data, the park administrations assess the effectiveness of measures implemented under management plans. The park administrations use programmes like QGIS, Qfield which together with ArcGIS license allow creation and management of database (flora, fauna and habitats distribution maps). In the case of Vânători – Neamț Natural Park, the monitoring and inventory of the habitats and species are achieved with Avenza Maps, installed on mobile phones. The collected data are being transposed on thematic maps using ArcGIS. The monitoring of the free bison is done with GPS collars, the data are downloaded from https://webservice.lotek.com/.

Table 11.11: Inventoried species, habitats and community interest habitats

<table>
<thead>
<tr>
<th>Species</th>
<th>Flora</th>
<th>Fauna</th>
<th>Habitats</th>
<th>CIH*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munții Rodnei National Park</td>
<td>50</td>
<td>450</td>
<td>74</td>
<td>27</td>
</tr>
<tr>
<td>Călimani National Park</td>
<td>69</td>
<td>2</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Cheile Bicazului – Hârsmaș Park</td>
<td>10</td>
<td>35</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Piatra Craiului National Park</td>
<td>7</td>
<td>46</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Cozia National Park</td>
<td>35</td>
<td>51</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Buila – Vânturarîta National Park</td>
<td>325</td>
<td>264</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Defileul Jiului National Park</td>
<td>64</td>
<td>49</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Retezat National Park</td>
<td>260</td>
<td>194</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Domogled Valea Cernei National Park</td>
<td>64</td>
<td>113</td>
<td>38</td>
<td>25</td>
</tr>
<tr>
<td>Semenic – Cheile Carașului National Park</td>
<td>13</td>
<td>8</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Cheile Nerei National Park</td>
<td>14</td>
<td>65</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>Munții Măcinului National Park</td>
<td>1 770</td>
<td>1 681</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Munții Maramureșului National Park</td>
<td>10</td>
<td>47</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Vânători – Neamț Natural Park</td>
<td>8</td>
<td>36</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Comana Natural Park</td>
<td>11</td>
<td>16</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Putna – Vrancea Natural Park</td>
<td>59</td>
<td>265</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Bucegi Natural Park</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Grădiștea Muncelului – Cioclovina Natural Park</td>
<td>3</td>
<td>105</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Porțiile de Fier Natural Park</td>
<td>116</td>
<td>336</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Lunca Mureșului Natural Park</td>
<td>1</td>
<td>1 831</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Apuseni Natural Park</td>
<td>45</td>
<td>76</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Balta Mică Natural Park</td>
<td>0</td>
<td>90</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>
Chapter 11: Biodiversity and protected areas

**Danube Delta Biosphere Reserve**


In addition, monitoring is done for bird colonies in the Purcelu Lake, Nebunu, Martinca, Hrecișca-Buhaiova, Ivanova Canal, Little Cuzmintii, Birds' Pond, Liteni Colony, Big Zaton, Ceaplace Island, Buhaz - Zăton, Murighiol Salt. Regular monitoring is also conducted in the ecological reconstruction areas: Ostrov Babina - Cernovca, A.P. Popina, Ostrov Ivancea, Fortuna, Old Danube Mm. 8 + 600, Carasuhat, Holbina II, Dunavăț III, Zaghen.

Action is taken by DDBRA to identify and delimit the breeding, nesting, feeding or sheltering areas of the wildlife in order to establish the appropriate monitoring and monitoring actions regarding diseases or mortality in the species of fish, birds and wild animals.

Starting with 2016, DDBRA updated the Management Plan approved by GO No. 763/2015, in order to apply the provisions of the relevant EU Directives and in particular for the inventory and mapping of habitats and species of community interest.

In June 2019, funding was obtained for the project “Revision of the management plan and the Danube Delta Biosphere Reserve regulation” through the Large Infrastructure Operational Programme (POIM/9/4/1/Increasing the degree of protection and conservation of biodiversity and restoration of degraded ecosystems for the period 2019–2023). Through project activities, the database on the area occupied by habitats and species of community interest is expected to be updated and problems and threats are planned to be identified in accordance with the requirements specified in MO No. 304/2018 regarding the approval of the Guide for the elaboration of the management plans of the protected natural areas.

### 11.4 Trends in development and management of protected areas

**Protected areas**

The management of protected natural areas in Romania includes a differentiated protection, conservation and use regime established to ensure the “in situ” special protection and conservation measures for the assets from the natural patrimony (table 11.12). National and natural parks are established by governmental decision and each of them has an administration contract.

According to the European Environment Agency (EEA), 23.4 per cent of the total territory of the country is under the protected area system, from which 0.66 per cent represents protected areas of national interest, 4.74 per cent represent the areas where national designated areas overlap with Natura 2000 sites and 18 per cent represents Natura 2000 sites. Currently, delineation of boundaries of protected areas is being revised. NANPA is leading a project on boundaries and a 1:5000 map is expected to be produced and corrections will be introduced. Most of the protected areas are located along the Carpathian Chain and in the Danube Delta (Map 11.1). The Carpathian Mountains and the Danube Delta are among the most important 200 ecoregions identified by WWF.

<table>
<thead>
<tr>
<th>Table 11.12: Protected area categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected areas of national interest (designated based on the IUCN criteria)</td>
</tr>
<tr>
<td>Number</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Scientific reservations</td>
</tr>
</tbody>
</table>
Part III: Media and pollution management

<table>
<thead>
<tr>
<th>Protected areas of international interest</th>
<th>National Parks</th>
<th>Nature Reserves and monuments</th>
<th>Natural Parks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area with natural elements of particular value in terms of physical geography, flora, fauna, hydrological, geological, paleontological, speleological, pedological or other offering the opportunity to visit for scientific, educational, recreational and tourism.</td>
<td>13</td>
<td>916</td>
<td>14</td>
</tr>
<tr>
<td>Area with natural elements and ecological significance, scientific, unique landscape, represented by the species of plants and wild animals rare, endemic or threatened with extinction</td>
<td>315,706</td>
<td>291,668</td>
<td>535,122</td>
</tr>
<tr>
<td>Landscape in which the interaction of human activities with nature over time created a distinct area with significant value landscape and / or cultural, often with high biological diversity.</td>
<td>II</td>
<td>III-IV</td>
<td>V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protected areas of community interest (designated under the community obligations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural site of universal natural heritage</td>
</tr>
<tr>
<td>Geoparks</td>
</tr>
<tr>
<td>Wetlands of international importance</td>
</tr>
<tr>
<td>Biosphere reserves</td>
</tr>
<tr>
<td>Special Protection Areas</td>
</tr>
<tr>
<td>Sites of Community Importance</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>


With accession to the European Union, Romania has put forward an objective to increase surface of protected areas through establishing new protected areas, expanding the boundaries of existing protected areas and in particular by designating areas for protection under the “Natura 2000” European network. Since 2012, the areas covered by protected areas network have increased by 1.2 million hectares from 10.83 million hectares in 2012 to 12.03 million hectares in 2018 (table 11.13).

Since 2011, several protected areas were designated. Proposals for the establishment of the protected natural area regime may be made at the initiative of any natural or legal person and are submitted to NANPA for approval.

Danube Delta and Razim-Sinoe Complex (ROSPA0031), Danube Delta (ROSCI0065) and Danube Delta-the marine area (ROSCI0066) were modified in 2011, 2016 and 2017, respectively. The marine area of Danube Delta (ROSCI0066) site has been extended from 123,374 ha in 2011 to 336,200 in 2016–2017.

As at December 2019, because of lack of data, it was impossible to evaluate Romania’s efforts to achieve SDG target 14.2 (by 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans), which is measured by the global indicator 14.2.1 (Number of countries using ecosystem-based approaches to managing marine areas).
Table 11.13: Areas covered by protected area network, 2012–2019, ha

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosphere reserves</td>
<td>664,446</td>
<td>664,446</td>
<td>664,446</td>
<td>661,939</td>
<td>661,939</td>
</tr>
<tr>
<td>National parks</td>
<td>316,872</td>
<td>316,872</td>
<td>316,872</td>
<td>317,419</td>
<td>317,419</td>
</tr>
<tr>
<td>Natural parks</td>
<td>772,810</td>
<td>772,810</td>
<td>772,810</td>
<td>769,842</td>
<td>770,027</td>
</tr>
<tr>
<td>Scientific reserves</td>
<td>24,654</td>
<td>24,654</td>
<td>24,654</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Natural monuments</td>
<td>15,413</td>
<td>15,413</td>
<td>15,413</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Natural reserves</td>
<td>347,320</td>
<td>324,182</td>
<td>324,182</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Scientific reserves, natural monuments and natural reserves</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>307,973</td>
<td>307,973</td>
</tr>
<tr>
<td>Natural sites of universal natural heritage</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>311,916</td>
<td>311,916</td>
</tr>
<tr>
<td>Wetlands of international importance</td>
<td>804,497</td>
<td>1,089,448</td>
<td>1,089,448</td>
<td>1,096,640</td>
<td>1,096,640</td>
</tr>
<tr>
<td>Special avifaunistic protection area</td>
<td>3,698,732</td>
<td>3,698,732</td>
<td>3,698,732</td>
<td>3,702,474</td>
<td>3,875,298</td>
</tr>
<tr>
<td>Sites of community interest</td>
<td>4,147,368</td>
<td>4,147,368</td>
<td>4,147,368</td>
<td>4,147,368</td>
<td>4,650,970</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10,830,227</strong></td>
<td><strong>11,092,040</strong></td>
<td><strong>11,092,040</strong></td>
<td><strong>11,353,887</strong></td>
<td><strong>12,030,498</strong></td>
</tr>
</tbody>
</table>


Note: Since 2015, scientific reserves, natural monuments and natural reserves have been merged due to NEPA is in process of classification and mapping the boundaries of protected areas.

According to the EEA 2015 State of the Environment Report – Black Sea Region, fish stocks in the Black Sea have deteriorated dramatically over the last three decades, while the diversity of commercial catches has fallen to 18 species, of which 16 are fish species and 2 are species of molluscs. This is the result of eutrophication, the introduction of exotic species and illegal, unregulated and unreported fishing.
Romania made some progress in achieving SDG target 14.4 (by 2020, effectively regulate harvesting and end over fishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics), which is measured by the global indicator 14.4.1 (proportion of fish stocks within biologically sustainable levels). For example, Romania took measures to prevent the diminishing of fish stocks, such as sturgeon - a species of migratory fish that Romania is making substantial efforts to protect, including by banning since 2006 the commercial fishing of sturgeon. Romania had agreed with Bulgaria and Ukraine, in 2017 and 2018, respectively, that the period of prohibition on the Danube would be the same in the shared border area. Romania also took measures to restore and preserve the population of wild sturgeon in natural habitats, including the banning of commercial fishing for a period of 5 years (2016–2021). These measures also targeted the development of sturgeon fisheries in order to reduce, in future, the pressure exerted by commercial fishing on stocks of wild sturgeon.

The country achieved with a high score the SDG target 14.5 (by 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information), measured by the global indicator 14.5.1 (coverage of protected areas in relation to marine areas). The proportion of marine key biodiversity areas that have been designated as protected areas has been growing and reached as high as 99.3 per cent since 2007. This means that the key marine biodiversity areas are under protection and this development is linked to the accession to EU and increase of areas under protected status. In 2018, the coverage of protected areas in relation to marine areas (exclusive economic zones) was 23.07 per cent, which corresponds to an area of 6,856.46 km².

Romania is in the process of implementing the Marine Strategy Framework Directive and is a signatory to the Black Sea Convention. Romania has designated within its coastal area both protected areas of national interest (nature reserves) and protected areas of European (Natura 2000) and international interest (biosphere reserves, wetlands of international importance). The amount of marine areas protected under the Birds and Habitats Directives has increased in Romania 4.7-fold, from 1,252 km² in 2008 to 6,362 km² in 2016. The sufficiency of marine Sites of Community Interest is measured by Eurostat for the entire EU using a sufficiency index. In 2013, values of this index ranged from 7 per cent for Spain to 100 per cent for Germany, Estonia and the Netherlands, 95 per cent for Denmark, 88 per cent for Belgium and 75 per cent for Romania. As at December 2019, the sufficiency index for marine Sites of Community Interest in Romania has exceeded the threshold of 100 per cent.

Sites for terrestrial and freshwater biodiversity covered by protected areas

For indicator 15.1.2 (proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type), the average proportion of freshwater key biodiversity areas covered by protected areas has increased from 57.43 per cent in 2010 to 60.97 per cent in 2019 – an increase of and the average proportion of terrestrial key biodiversity areas covered by protected areas has increased from 65.03 per cent to 76.02 per cent for the same period – an increase of 16.9 percentage points. Romania is making progress in achieving the SDG target 15.1.

In the European context, according to Eurostat, the indicators for the surface of terrestrial sites designated under of Natura 2000 and the number of protected species in Romania, in accordance with the EU Directive on Habitats, was 93 per cent in 2013, indicating a high degree of conformity, and thus slightly above the EU average of 92 per cent. After the designation of new Natura 2000 sites in 2016, the indicator for the surface of terrestrial sites designated under Natura 2000 was close to 100 per cent.

However, according to the most recent evaluation report by the EC on the conservation status of habitats and species in Romania as per the Habitats Directive, 63 per cent of the biogeographical assessments of habitats were “favourable” in 2013 (compared with the EU average of 16 per cent), 28 per cent were “unfavourable – inadequate” (compared with the EU average of 47 per cent) and 7 per cent were “unfavourable – bad” (compared with the EU average of 30 per cent). In terms of species, 19 per cent of the assessments were “favourable” in 2013 (compared with the EU average of 23 per cent), 67 per cent were “unfavourable – inadequate” (compared with the EU average of 42 per cent) and 6 per cent were “unfavourable – bad” (compared with the EU average of 18 per cent). It was therefore concluded that the habitats in Romania have the best conservation status across the EU.
**Management plans**

At the national level, 249 management plans were approved in 2016 and are in different stages of implementation. The approved management plans are realized in the context of the spatial overlap of the respective protected natural areas. These management plans cover 9 national parks, 8 natural parks, 1 geopark, 88 Avifauna Special Protection Areas and 196 Sites of Community Interest.

More management plans have to be approved to ensure the timely implementation of measures and carry out monitoring and assessment, which are essential activities for the long-term management of protected areas. Funding for the implementation of the management plans started in 2016 by the funding from the Ministry of European Funds, improving absorption capacity of EU funds, which as at December 2019 is rather low (chapters 3 and 6).

Out of the total of protected natural areas (1,574) of different categories, 760 protected natural areas operate with management plans, 1,094 without management plans (table 11.14) from which 277 management plans are submitted and at the different stages of approval process. However, some protected areas can have two management plans in case they have also a Natura 2000 status.

**Table 11.14 Protected areas with or without management plans**

<table>
<thead>
<tr>
<th>Nature reserves and nature monuments</th>
<th>With</th>
<th>Without</th>
</tr>
</thead>
<tbody>
<tr>
<td>National parks, natural parks, geoparks</td>
<td>434</td>
<td>783</td>
</tr>
<tr>
<td>Special protection areas</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Sites of community importance</td>
<td>90</td>
<td>81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>760</strong></td>
<td><strong>1,094</strong></td>
</tr>
</tbody>
</table>

*Source: NANPA, 2019*

As at December 2019, four management plans were elaborated, and they are under evaluation within the Large Infrastructure Operational Programme, and 12 management plans have been elaborated and submitted for approval to the Ministry of Environment, Waters and Forests. In order to be in line with the management plans, 74 forest architectural landscaping plans have been modified and necessary measures have been taken to conserve the biodiversity, 24 territorial administrative units for which pastoral arrangements have been established, 50 urban plans have been modified and contain minimum conservation measures established by NANPA.

The Management Plan and the Regulations for Danube Delta Biosphere Reserve were approved by the GD No. 763/2015. Under the projects “Revising the management plan and the Danube Delta Biosphere Reserve regulation” and “Measures to ensure a favourable status of protection and conservation of habitats and endangered species in the Danube Delta” through the Large Infrastructure Operational Program (POIM/9/4/1/Increasing the degree of protection and conservation of biodiversity and restoration of degraded ecosystems for the period 2019–2023), the management plan of the Danube Delta Biosphere Reserve is planned to be revised and will integrate a biosphere reserve, 3 Natura 2000 sites, 3 National parks and 20 strictly protected areas.

Out of 22 national and natural parks managed by Romsilva, 13 parks have management plans. The management plans for Piatra Craiului National Park, Călimani National Park, Grădiștea Muncelului – Cioclovina Natural Park and Munții Măcinului National Park were revised in 2015 and await their approval by the Ministry of Environment, Waters and Forests. For eight parks the management plans are in the final stage of approval at the Ministry of Environment, Waters and Forests. The management plan of Apuseni Natural Park is in the approval procedure at the NANPA. In the case of Defileul Jiului National Park and Semenic – Cheile Carașului National Park, the management plans are in the approval procedure at the County Agencies for Environmental Protection.

To support the development of management plans, the ministry in charge of the environment published in May 2018 the Guide for developing management plans of protected natural areas (Ministerial Order No. 304/2018) making mandatory the new template for preparing management plans for protected areas. In the process of reviewing the management plans, Romsilva found several overlaps in information and a series of statistical data cumbersome to collect by the administrators of protected areas and irrelevant from the perspective of natural protected area management, resulting in lengthy (e.g., 1,400 pages for the management plan of the Iron Gates Natural Park, and of the natural protected areas overlapping with the park) and difficult to use management plans.
In 2019, Romsilva submitted its comments to the ministry in charge of the environment, water and forests and to the National Agency for Natural Protected Areas asking to be involved in a process of revising and simplifying the 2018 Guide. The two public authorities responded positively to Romsilva’s request. The process of revising the 2018 Guide was not initiated as at October 2020.

Management of protected areas

There is no system of self-assessment conducted in protected areas. The management effectiveness of the protected area system at national level is not assessed systematically. Assessment of the custodian management was done in 2013, which concluded that Romania has a participatory and progressive management of protected areas.

Until 2018, Romania had various options for the management of protected areas that involved various legal entities in the management including NGOs, county councils, hunting and fishing associations, private forest owners, regional development organizations and research institutions. Most of NGOs participated in the initial establishment of Natura 2000 sites. This type of management was built on participatory and collaborative management and in majority of the cases the protected areas, except the Danube Delta Biosphere Reserve, have been managing the sites without the state budget by mobilizing resources from a variety of donors including the EU. As at December 2019, the protected area system is managed by NANPA, Romsilva, DDBRA, county councils and private legal entities (table 11.15).

Table 11.15: Institutions for protected area management, December 2019

<table>
<thead>
<tr>
<th>Nature reserves and monuments</th>
<th>NANPA</th>
<th>Romsilva</th>
<th>DDBRA</th>
<th>County councils</th>
<th>Private legal entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Ha</td>
<td>646</td>
<td>95,434.7</td>
<td>192</td>
<td>89,595.8</td>
<td>22</td>
</tr>
<tr>
<td>No. Ha</td>
<td>2</td>
<td>52,594.3</td>
<td></td>
<td>14,315.2</td>
<td>34</td>
</tr>
<tr>
<td>No. Ha</td>
<td></td>
<td></td>
<td>1</td>
<td>8,396</td>
<td>21</td>
</tr>
<tr>
<td>National parks</td>
<td>12</td>
<td>309,547</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural parks</td>
<td>4</td>
<td>23,568.2</td>
<td>10</td>
<td>511,553.4</td>
<td></td>
</tr>
<tr>
<td>Biosphere reserves</td>
<td>2</td>
<td>85,518.26</td>
<td>1</td>
<td>576,421.7</td>
<td></td>
</tr>
<tr>
<td>Wetlands of international importance</td>
<td>18</td>
<td>520,129.2</td>
<td>1</td>
<td>576,517.8</td>
<td></td>
</tr>
<tr>
<td>Natural site of universal natural heritage</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>311,915.9</td>
</tr>
<tr>
<td>Special protection areas</td>
<td>142</td>
<td>21,80844</td>
<td>22</td>
<td>878,109.6</td>
<td>5</td>
</tr>
<tr>
<td>Sites of community importance</td>
<td>400</td>
<td>2,520,763</td>
<td>24</td>
<td>868,165.7</td>
<td>2</td>
</tr>
<tr>
<td>Geopark</td>
<td>1</td>
<td>102392</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>1,211</td>
<td>54,43,131.1</td>
<td>263</td>
<td>2,751,229.26</td>
<td>28</td>
</tr>
<tr>
<td>Source: NANPA, 2019.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All protected areas are required to report to NANPA on annual basis. Before 2016, reporting was submitted to the Ministry of Environment (at that time) and NEPA. Since NANPA was established, a new approach has been introduced to harmonize the structure of reporting with a uniform template developed for the reporting.

Scientific councils operate at all national and natural parks. Management of protected areas involve stakeholders through consultative councils which consist of representatives of local public administration, local agencies, business, forest-owners association, farmers and NGOs. They all participate in the development of management plans. The management plan is subsequently approved by the scientific councils and forwarded to the Ministry of Environment, Waters and Forests for its final approval, including the budget. The approval of management plans is slow and some of the management plans are not approved since 2015. In 2018, the guidelines for designing management plans became very detailed as it requires very detailed description of each species and detailed socio-economic data. These factors create complications for protected areas management to develop management plans and consequently to apply for project funding.

Based on the above, the implementation of the Recommendation 9.3 in the second EPR of Romania asking the Ministry of Environment and Forests (at that time) to provide resources and capacity-building necessary to produce protected area management plans for all protected areas for which these are required, and necessary tools and better capacity to access the available EU funds to the management authorities of protected areas in order to
set up required activities for their management and develop mechanisms to support the livelihoods of the surrounding communities, is ongoing but at a slow pace.

For small protected areas, local forest directorates sign custody contracts with LEPAs. Under the management of 22 national and natural parks these administrations are also managing the smaller Natura 2000 sites. However, with the shift of custodianship over to NANPA, now Natura 2000 sites which were managed by the custodians (NGOs, forestry directorates) moved to NANPA.

11.5 Trends in development and management of ecological networks

**UNESCO World Heritage Sites and Biosphere Reserves**

Romania joined other 11 European countries in 2007 in the serial nomination of “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”\(^{138}\). The site was inscribed in 2007 and the boundaries of the site were extended in 2011 and 2017 respectively. The Romanian part covers 92,023 ha of forests in eight designated sites. From this coverage, 24,000 ha is under the core zone, which equals 26 per cent of the entire site, the second largest portion of the entire area after Ukraine (31 per cent) and 64,500 ha is in the buffer zone. Since the inscription, two Decisions of the World Heritage Committee have been issued (Decision 42 COM 7B.71 in 2018 and Decision: 43 COM 7B.13 in 2019) concerning the logging operations undertaken in the buffer zones of the Romanian components of the property and that no logging operations are allowed in the buffer zones of the property if they could negatively impact natural processes and the property’s Outstanding Universal Value. In this respect, a joint World Heritage Centre/IUCN Reactive Monitoring mission was undertaken to Romania in 2019. Romania has developed its tentative list and there are four natural sites preliminarily identified.

Romania’s Danube Delta Biosphere Reserve is the third largest in Europe and home of Europe’s second largest wetland. It contains the greatest expanse of reed beds worldwide and one of the world’s largest wet habitat zones. The hydrological network of Romania has a total length of 65,000 km. The aquatic ecosystem is rich in diversity and includes the Black Sea, rivers, floodplains, glacial lakes, subterranean karst cavities and caves, coastal wetlands, bogs and mountain rivers. The bogs produce rich topsoil and provide unique habitat for different species. Romanian caves provide an invaluable record of quaternary geology in this part of the world. Today, more than 10,000 caves are known, 8,000 of which are located in the southwest. In spite of the poor conditions offered by a cold dark climate, life is flourishing in many Romanian caves that possess, for instance, a high level of bat diversity. Also, a part of the Danube Delta was inscribed on the UNESCO World Heritage List since 1991.

For the other two biosphere reserves, Retezat and Pietrosul Mare, both of them recognised by MAB UNESCO in 1979, Romania received a request from UNESCO to update the information according to the Sevilla Strategy. The periodic review forms, for both sites, were sent to UNESCO in 2019, and updated information were sent in September 2020, including the proposal to change the name for Pietrosul Mare Biosphere Reserve into Rodnei Mountains (Munţii Rodnei) Biophere Reserve. A decision regarding the maintaining these two biosphere reserves in the World Network of Biosphere Reserves is expected to be taken at the 32nd session of CIC-MAB.

While no data are available for the assessment of achievement of the SDG target 11.4 (strengthen efforts to protect and safeguard the world’s cultural and natural heritage), which is measured by the global indicator 11.4.1 (Total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage, by source of funding (public, private), type of heritage (cultural, natural) and level of government (national, regional, and local/municipal)), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)), Romania is concentrating its efforts and resources for preserving beech forests sites and DDBRA for Danube Delta World Heritage Site.

**Ramsar sites**

Romania ratified the Ramsar Convention in 1991. Romania designated the Danube Delta as its first Ramsar site, as at July 2020 has 20 sites with a total of 1,175,880 ha. Since 2012, 12 sites have been designated and the areas covered by the Ramsar sites have increased by 252,283 ha. The Directorate for Biodiversity of the Ministry of Environment, Waters and Forests is the Designated Ramsar Administrative Authority.

While national awareness of the importance of wetlands and greater concern for their conservation have increased, as indicated in the COP13 National Report, 2018, the difficulties to implement the Ramsar Convention lie on the increasing pressure from the development activities on all types of wetlands and lack of stable and secured funding to support developed in the wetlands. Furthermore, the report highlighted the priorities for future implementation of the Convention including the support for regional initiatives and cooperation, coordination and harmonization with other multi-environmental agreements, implementation of the Natura 2000 network by developing site-specific management plans together with the Water Framework and Marine Strategy Framework Directives, alongside with the national strategy on biological diversity. The requirements of the Ramsar Convention play a decisive role within the context of implementing Natura 2000 and biodiversity strategies.

**Natura 2000**

According to the EEA (2020), Romania has 171 Special Protected Areas (SPAs) and 435 Sites of Community Interests thus 606 sites designated for Natura 2000 network. At February 2020, the Natura 2000 sites cover 60,577 km² including 54,214 km² of land area, which equals to 22.7 per cent of the land, and 6,362 km² of marine area. Between 2012 and 2020, additional 4,902 km² of areas were designated. According to the 2007 study on *Natura 2000 in Romania – A decade of governance challenges*, Romanian Natura 2000 network protects 88 natural and semi-natural habitats, 236 rare, threatened species or endemic plants, mammals, reptiles, amphibians, fish, and invertebrates species under the Habitats Directive and 108 birds species under the Birds Directive.

More than 2.6 million ha of forest area is included in EU Natura 2000 Network, which equals to 11 per cent of the Romanian territory.

**Natura 2000 sites in the Danube Delta**

ROSPA0031 Danube Delta and Razim-Sinoe Complex, ROSCI0065 Danube Delta, ROSCI0066 Danube Delta - the marine area overlaps and partially exceeds the boundaries of the Danube Delta Biosphere Reserve, which were designated in 2007 for the protection of species and habitats of Community interests and whose Standard Forms were updated in 2011, 2016 and 2017.

ROSPA0031 Danube Delta was designated for the protection of 97 species of birds in 2007, in 2016 by updating the Form, the site is designated for the protection of 220 species of birds listed in Annex I to Council Directive 2009/147/EC, of which: 13 permanent, 95 species reproduce, 38 species wintering, 137 species are concentrated during the migration period.

ROSCI0065 Danube Delta has been designated for the conservation of 29 types of habitats of community interest, of which 7 habitats of priority interest and 5 species of plants, 9 species of invertebrates, 15 species of fish, 2 species of amphibians and 3 species of reptiles and 7 species of mammals. ROSCI0066 Danube Delta - marine area, was for the conservation of species and habitats of community interest: 4 types of habitats of community interest and 2 species of fish, 2 species of mammals, species listed in Annex II of Council Directive 92/43/EEC.

Between 2019 and 2023, the inventory and mapping of all habitats and species in the protected areas of the Danube Delta will be carried out through the project “Revision of the management plan and the Danube Delta Biosphere Reserve regulation” funded by the Large Infrastructure Operational Program (POIM/9/4/1/Increasing the degree of protection and conservation of biodiversity and restoration of degraded ecosystems for the period 2019–2023).

### 11.6 Legal, policy and institutional framework

#### Legal framework

The Law No. 57/2016 established NANPA as a public institution with legal personality, financed from the budget of state and from its own incomes, subordinated to the central public authority for protection environment, water and forests. It provides provisions related to the contractual arrangements between NANPA and other institutions or legal entities such as NGOs, city councils, research institutions. The Law specifies that the central public...
authority for the protection of the environment, water and forests will ensure integrating the management strategy of the Danube Delta Biosphere Reserve with the policies of NANPA.

The Law No. 220/2019 amended the GEO No. 57/2007 and Law No. 95/2016. The main legislative amendments were related to the administration of natural protected areas, which were managed by custodians now been taken over by NANPA, through its local structures. Therefore, the concept of ‘custodian of natural protected area’ was eliminated and replaced in the wording of the law with the ‘National Agency for Natural Protected Areas’. In addition, according to the amended in 2011 GEO on the Regime of Protected Natural Areas, Conservation of Natural Habitats, Wild Flora and Fauna (No. 57/2007), the central public authority in charge of the environment and forests had to initiate for Governmental approval in 2011, the establishment of modalities of requesting, calculating and granting compensations to the owners or concessionaires of lands from protected natural areas for the observance of the restrictive provisions from the management plan of the protected natural area or for the conservation measures. As at December 2019 such modalities have not been established. Nonetheless, Governmental Decision approving the Methodological Norms for granting, using and controlling the compensations representing the equivalent value of products that owners do not harvest, due to the protection functions established by forest arrangements that determine restrictions in wood harvesting (No. 447/2017) offers private forest owners the possibility of seeking compensation for forests located in protected natural areas, including those where logging is prohibited.


The GEO No. 23/2008 on fisheries and aquaculture (Law No. 317/2009) gives authority to DDBRA to manage fish resources from Danube Delta Biosphere Reserve. It was also modified many times until now, one of the changes is clarifying the use of the fish and agricultural polders inside the reserve.

The GEO No. 127/2010 for the adoption of some measures foreseen for the economic-social development of the Danube Delta area was approved by the Law No. 216/2013. The Law No. 216/2013 has amended the Law No. 82/1993 regarding the establishment of the Danube Delta Biosphere Reserve to support DDBRA in its activity. The Law No. 136/2011 modified and completed the Law No. 82/1993 and established the Administrative Advisory Council and the Scientific Council. By the Law No. 136/2011, the local population has the right of exclusiveness at the renewable natural resources use through traditional economic activities.

According to the Forest Code - Law No. 46/2008, virgin and quasi-virgin forests are strictly protected and included in the National Catalogue of Virgin and Quasi-Virgin Forests established as an instrument to identify, register and protect valuable forests. As of May 2019, an area of 29,060 ha is officially included in the catalogue and further identification and mapping of virgin forests are on-going. Obligation to preserve “virgin and quasi-virgin forests” is enshrined in the Forest Code and in the MO No. 3397/2012 and No. 2525/2016 regarding protection of virgin forests and in EU Birds and Habitats Directives.

The GD No. 538/2015 approved the Rules on the access and movement of ships and boats on internal canals and lakes in the perimeter of Danube Delta Biosphere Reserve. GD No. 763/2015 for approval of the Management Plan and the Regulations for Danube Delta Biosphere Reserve.

A new list of Sites of Community Interest was approved in 2011 by the MO No. 2387. The order was adopted as obligation in relation to Habitats Directive in order to assure a better protection of some species and habitats of community interest and better coherence of Sites of Community Interest network. Also, by this order the reference list of species and habitats of community interest was updated.

The GD No. 447/2017 regulates the approval of the methodological norms for granting, using and controlling the compensations representing the value of the products that the owners do not harvest, due to the protection functions established by forest management plans. Compensation from the state budget is granted to the forest owners for the losses due to the restrictions imposed on logging and capitalization if the wood, due to the priority fulfilment by the forest of the protective functions.

In 2009 the MO No. 979/2009 was adopted on the introduction of alien species, the interventions on invasive species and the reintroduction of native species provided in Annexes No. 4A and 4B to the GEO No. 57/2007, approved with amendments by the Law No. 49/2011, as amended. This implementation of the order would
support the achievement of SDG target 15.8 (by 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species) measured by the global indicator 15.8.1 (proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species).

Recommendation 9.2 (a) of the second EPR of Romania asking the Government to evaluate the current system of compliance and enforcement related to the existing legislation on protected areas and take necessary steps to correct its shortcomings is partially implemented. While Romania has established a solid network of protected areas and the legislation on protected areas provides a framework for the management of these sites, there are obstacles to implementation in terms of compliance and enforcement, public awareness and communication with local communities, and availability of adequate funding for their management. Specifically, capacity for enforcing the laws regarding hunting and other illegal activities (such as illegal construction) within the protected areas is insufficient.

**Policy framework**

**Strategy for Sustainable Development**

The SDS 2030 provides overall framework for implementation of the SDGs 14 and 15 which concern the conservation of biodiversity and ecosystems. Under the Goal 14, the strategy specifies measures such as implementation of marine protected areas management plans and rehabilitation of the coastal area in order to reduce marine pollution, minimize the effects of acidification, manage sustainable fishing and preserve, within reasonable limits, the viability of traditional activities including recreational and sports fishing. Under the Goal 15, the strategy stipulates objectives such as to eradicate illegal logging through development of an integrated digital system for the monitoring of the exploitation and transport of timber and measures such as afforestation and reforestation of forest land or degraded land. Furthermore, the strategy gives an emphasis to the wetland management, conservation of mountain biodiversity and outlines the objective to support research and development in the study, management, protection and preservation of the diversity of natural heritage.

**National Biodiversity Strategy and Action Plan for the period 2014–2020**

The 2013 NBSAP for the period 2014–2020, updated in 2017, sets the general strategic framework for biodiversity and nature protection in the country, identifying strategic objectives and corresponding actions to be implemented by 2020. Four general action directions were identified as priority areas to be achieved by 2020 such as: stop the decline of biodiversity and recovery of the degraded systems; integration of biodiversity issues in all sectoral policies; promote traditional innovative methods, practices and knowledge and clean technologies to support biodiversity conservation and improve communication and education in the field of biodiversity. The Action Plan includes objectives, actions, responsible institutions, time frame, degree of priority, estimated required budget of 6.5 billion lei, financing sources and performance indicators for each action. The overall matrix includes 10 objectives, 15 sub-objectives and a total of 170 actions.

No reports are available on the status of the implementation of the Strategy and Action Plan. While government expenditures on the protection of biodiversity and landscape reached 26.6 million lei in 2015 (€5.9 million), in 2018, they reach amounted 2.1 million lei (€0.5 million). However, it is difficult to assess the share of biodiversity-related expenditures vs landscape protection-related ones. Moreover, no activities related to biodiversity conservation were financed form the Environment Fund.

A number of actions for natural protected areas management were planned but never implemented, such as to establish legal procedures for purchasing private lands included in the category of natural protected areas (50,000 ha) and paying compensation for land and forest owners who comply with the restrictions under Natura 2000 site requirements, to assess by 2014, natural habitats and wild species of community interest in order to finalize the designation of Nature 2000 network, to establish a national monitoring system for biodiversity and natural protected areas according to the provisions of Birds and Habitats Directives, and to develop and adopt the Red List.

Concerning achieving the SDG target 15.9 (by 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts), measured by the global
indicator 15.9.1: (a) Number of countries that have established national targets in accordance with or similar to Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020 in their national biodiversity strategy and action plans and the progress reported towards these targets; and (b) integration of biodiversity into national accounting and reporting systems, defined as implementation of the System of Environmental-Economic Accounting), according to the United Nations statistics and the CBD Secretariat website, Romania has not yet developed national target reflecting ABT2 and hence no progress has been reported. However, Romania reported in 2017 that Romania belongs to the countries with an integrated biodiversity values into national accounting and reporting systems, defined as implementation of the System of Environmental-Economic Accounting.

Integration of policies on biodiversity conservation in all sectoral policies has been identified as one of the four main action directions of the national strategy for biodiversity conservation. The document further states that sustainable use of biodiversity components presupposes the ecosystem approach of the integrated management of resources and the integration of biodiversity conservation priorities in sector policies and strategies.

Until date, these goals are not found in a coherent and unified form in sectoral policies, the main reason being the lack of a monetary value given to services offered by natural ecosystems, services which are now considered public goods with no market value. The strategy further calls for a need to assess the value of natural resources, renewable and non-renewable, and of services offered by the normal functioning of ecological systems and integration of costs of conservation and restoration of biodiversity in the assessment of policies cost and sector strategies.

Based on the fact that intersectoral activities were included in the Strategy, it can be concluded that the Recommendation 9.4 (a) asking the Ministry of Environment and Forests (at that time) to include intersectoral activities and consultations in the NBSAP in order to mainstream the values of nature into national planning and financing and avoid further biodiversity losses and the degradation of ecosystem services, was implemented. However, full implementation of the Strategy and Action Plan remains a challenge to overcome.

Rural Development Programme 2014–2020

The Rural Development Programme 2014–2020 provides rural development priorities with focus on the indicative budget for focus areas, selected measures and expected targets. The programme outlines three main objectives: i) restructuring and increasing farm viability; ii) sustainable management of natural resources and tackling climate change; iii) diversification of economic activities, creation of jobs, improvement of infrastructure and services for improving the quality of life in rural areas. The latest Programme also integrates biodiversity conservation issues.

The objectives were planned to be achieved through six EU priorities. From six priorities, priority No. 4 is on restoration, preservation and enhancement of ecosystems related to agriculture and forestry. The total budget to support measures under the priority 4 is €27 million. Main measures are directed to support preservation of the biological diversity of agricultural and forestry lands, as well as to the protection and improvement of water and soil resources. The programme encourages the maintenance of extensive farming practices, with a low impact on environment. Two defined target indicators are: the percentage of forest/other wooded area under management contracts supporting biodiversity and percentage of agricultural land under management contracts supporting biodiversity and/or landscapes.

Thus, by reducing the periodicity of silvicultural interventions outside these areas, optimal conditions for wildlife development, shelter, feeding and nesting are secured. Also, by maintaining the stands’ density, the forest's capacity to adapt to the effects of climate changes and runoff retention shall be improved. Support is provided for forest owners included in the national forest fund who join the forest-environment commitments, thus contributing to the conservation of biological diversity and soil protection.

Romania is taking measures to provide an enabling framework to promote organic agriculture with the aim to improve environmental conditions and to supply consumers with high quality organic products. The financial support for organic farmers was provided through the Programmes is around €236 million. In the Programme 2014–2020, organic farming is a main tool for minimizing water pollution in the sustainable land management systems to control nutrients, manage crop protection, water and erosion. The Ministry of Agriculture has offered a special package in the National Rural Development Programme 2014–2020, dedicated to certified organic
meadows and pastures. No analysis was carried out to assess the implementation of this measure. However, organic production is expected to support the main objective of the Agrifood Sector Development Strategy for Medium- and Long-Term Horizon 2020–2030 on increasing production and exports of organic products.

Starting from 2017 based on the GD No. 447/2017, a compensation is being paid from the funds foreseen under the Rural Development Programmes. In 2018, around €5.5 million for approximately 500 forest owners and in 2017 around €3.2 million for approximately 210 forest owners were paid respectively. The Recommendation 9.1 in the second EPR of Romania asking the then Ministry of Environment and Forests to explore the development of innovative financing mechanisms to compensate private forest landowners for the restrictions imposed on them to support the protective functions of forests, was implemented.

**National Eco-Tourism Strategy 2011–2015**

The main aim of National Eco-Tourism Strategy 2011–2015 was to promote tourism with lesser negative impact on environment. Under this strategy Romania has taken measures to establish wildlife and nature tourism products in conformity with the European Ecotourism Labelling Standard. Furthermore, ten ecotourism destinations were established. This development helps generate income for local communities, creates additional social economic value in protected areas and increase awareness about nature conservation and its important contribution to local development.

**Others**

Biodiversity conservation and protected area management have been included in several national strategies and policy documents:

- Operational Programme Large Infrastructure
- Multiannual National Strategic Plan for Aquaculture
- Master Plan for the Protection and Rehabilitation of the Romanian Black Sea Coast
- National Tourism Development Master Plan 2007–2026

**Institutional framework**

The Ministry of Environment, Waters and Forests is responsible for developing and implementing policies and strategies for biodiversity conservation, forest management and protected areas at national level. The Ministry is in charge to drafting, updating, coordinating and monitoring of the NBSAP for 2014–2020, the integrated management strategy of the coastal zone and the Strategic Action Plan for the rehabilitation and protection of the Black Sea and the National Forest Strategy 2027 and the Forest Action Plan. It elaborates draft normative acts and ensures the harmonization of national legislation in its fields of activity. The Ministry coordinates the implementation of measures for the protection and conservation of sturgeons in the Danube Basin and Action Plan for the conservation of sturgeons.

The Ministry approves guidelines for monitoring protocols and unitary methodologies for monitoring the conservation status of species and habitats of community interest. The Ministry approves guidelines for the elaboration of the management plans of the protected natural areas. Together with NANPA, it establishes, develops and updates databases on the national network of natural protected areas. In case of new proposals for establishing protected areas, the Ministry notifies landowners and administrators and organizes consultations with all stakeholders. The Ministry conducts monitoring, evaluation and control in administering natural protected areas of national interest. The Ministry, through the Department for Wildlife Resources Management, is responsible for game management and establishes every year the hunting quota for the game species of interest.

**National Environmental Protection Agency**

NEPA coordinates and monitors implementation of environment legislation in the sector of nature conservation and biodiversity. The main tasks of NEPA are designing and hosting the databases designated for biodiversity
and preparing the reports for international organizations. NEPA is responsible for annual reporting of Common Database of Designated Areas of EEA. It coordinates the accurate analysis of the monitoring reports on biodiversity and the procedure for issuing environmental permits for harvesting activities/capture and/or purchase and/or marketing of plant and animal fossils, vertebrates and invertebrates, as well as plants and animals from the flora and fauna respectively. NEPA is responsible for reporting to EU on Natura 2000 sites. Information gathered as part of the protected area management plans are collected summarized and submitted to EU, which include information on species population and their conservation status. NEPA reports to the CBD and EEA and is responsible for the implementation of Nagoya Protocol. Due to problems with delineation of borders of protected areas, some of the reporting still miss precise information. It also analyses biodiversity related parts of environmental assessments of proposed plans and projects or information and relevant evaluation studies within the framework the documentation regarding the projects and plans of activities that may have significant negative effect on protected natural areas, natural habitats, species of wild fauna and flora of community interest.

LEPAs coordinate environment activities at local level by running the procedure of strategic environmental assessment, environmental impact assessment and appropriate assessment for plans, programmes and projects, which can have a negative impact on protected areas and biodiversity and implementation of nature conservation legislation at local level. LEPAs have management attributions for protected areas without custodians or administrators.

**National Environment Guard**

NEG controls any activity's compliance with legislation regarding protected areas, conservation of natural habitats, flora and fauna and aquaculture; the compliance of activities with the conditions from the environment permit; the activities with impact on the natural habitat areas, conservation of ecosystems, flora, wildlife and aquaculture; the compliance of management measures taken in order to maintaining or restoring of some terrestrial and aquatic surfaces, with particular emphasis on the Danube Delta Biosphere Reserve.

The implementation of the Recommendation 9.2 (b) in the second EPR of Romania asking the Government to ensure that adequate financial resources are made available for training environmental guards and increasing their numbers to control illegal hunting in protected areas, is being implemented. On training environmental guards, the annual budget of the Guard contains a budget line dedicated to the in-service professional training. Though it is not entirely targeted to the control of illegal hunting in protected areas, it could be assumed that the change in budget for training would indicate the overall trend. Between 2016 and 2019, the budget for training has been steadily decreasing: 2015 - 10,000 lei (€2,250), 2016 - 70,000 lei (€15,587), 2017 - 50,000 lei (€10,944), 2018 - 40,000 lei (€8,595), and 2019 - 0 lei. At the same time, the Guard implemented a project between 2015 and 2017 on developing methodology for establishing ecological corridors and training of guards for the protected area management funded by the Programme “Environment, Climate Adaptation and Ecosystems” (Financial mechanism of the European Economic Area) with a budget of over €1 million. Within this project, 300 employees of the protected areas’ administrative units including environmental guards were trained for efficient monitoring of ecological corridors.

**National Agency for Natural Protected Areas**

NANPA was established pursuant to the Law No. 95/2016 as a public institution with legal personality, subordinated to the Ministry of Environment, Waters and Forests, financed both from the state budget and from own incomes. While the main budget of NANPA is provided by the Ministry, approximately 2–3 per cent is generated from the income from services provided by the protected areas and other taxes, for example, fees for permits for taking pictures, using cameras in the protected areas.

Before the establishment of NANPA 40 per cent of designated protected areas were not managed by any institution. Its establishment was positively welcomed by custodians initially as it was expected that NANPA will provide coherence to the protected areas system in the country, provide management to the orphan sites through its local structure, lobby for funding from the state budget and provide guidance and oversight to all protected areas. However, the shift of custodianship was done abruptly resulting in custodians losing their commitment. Several discussions have been held between the former custodians and the Ministry of Environment, Waters and Forests and at December 2019 it was expected a draft methodology and proposal for partnership to be developed
In order to strengthen the institutional capacity of NANPA, legislative changes have been approved over the last two years, regarding the management of protected natural areas, such as: the MO No. 1447/2017 on the Methodology of assigning in administration and custody the protected natural areas was amended; the GEO No. 75/2018 on areas from the national network that are managed by NANPA through territorial structures from the county level and through specially established structures (taking over the management of the areas from the custodians); the GEO No. 13/2018 on ensuring the management of the unallocated protected natural areas by NANPA and its territorial structures; and the GD No. 867/2018 on the amendment of the organizational chart and functional structure of NANPA in order to establish territorial structures with area management tasks at the county level.

NANPA has branches in each county. As at December 2019, 30 out of 40 county services are operational. In total 180–190 people are working in NANPA including 1 to 12 persons at each county office and 50 people at the headquarters. According to the approved organigram of NANPA, for each county office 5–15 people should be recruited bringing to a total of 490 filled posts. The Law No. 95/2016 specifies the number of posts allocated to NANPA is a minimum of 90 for the central structure and a minimum of 400, but not more than 30 posts for each subordinate public institution, with the role of administration of protected natural areas. This means that as at December 2019, NANPA and its county offices are working with less than half of the approved staff. The staff shortage is significantly hindering the full implementation of its duties.

Starting from 2019, NANPA put into operation the territorial structures by selecting specialized personnel and establishing the premises dedicated to activity thereof. Since then, 30 territorial services at the counties out of a total of 41 have been operationalized. The guidelines for staff and managers training have been initiated which include themes such as assessing the impact of plans, projects and activities on protected natural areas; developing and implementing management plans conservation measures; monitoring the conservation status of natural habitats, and the populations of the species that are the object of the designation of the protected natural areas; and controlling the application of legal provisions on the management of the protected natural areas.

Danube Delta Biosphere Reserve Administration

DDBRA was established as a management authority mandated to conserve, protect, regulate, control and manage the Danube Delta Biosphere Reserve (Law No. 216/2013, which amended the Law No. 82/1993 regarding the establishment of the Danube Delta Biosphere Reserve). The Administration is subordinated to the ministry in charge of the environment and is led by a governor, appointed by the Romanian Government at the proposal of the ministry. The Governor participates in meetings of the Scientific and the Advisory Councils. The Scientific Council includes representatives from the Administration and all other entities involved in the activities of the Reserve, such as local authorities, representatives of relevant ministries, health services, research institutions, Academy of Science and business.

The Administration is a unique institution as it performs double function to be an administrator of the Danube Delta Biosphere Reserve and an environmental authority for the Danube Delta Romanian region. One city and 21 villages are located in the territory of the reserve. While economic activities are on-going, the Administration’s primary goal is to maintain the ecological balance. The full-time employees of DDBRA has been increased from 114 in 2012 to 124 in 2019. DDBRA receives an annual budget from the ministry in charge of environment, which varies from year to year (Table 11.18). However, the funds received from international projects have increased multiple times.

In 2010, the Administration had an ecological warden and inspection department with a total number of 56 staff and a mobile control unit with 6 staff. The mobile unit was focused mainly on surveying tourism activity. In 2015, the Danube Delta Integrated Control Commissariat was established in the Authority to combat fish poaching mainly. The total staff number increased to 68 persons. In 2018 the Commissariat was split in small departments, subordinated to the governor, with a total number of 38 persons and 2 mobile units (monitoring and control units) of 13 members each.

### Table 11.18: Budget allocated for the Danube Delta Biosphere Reserve, 2010–2019, million lei

|------|------|------|------|------|------|------|------|------|------|------|
Fees and incomes from the activities carried out on the territory of the Reserve are used for conservation measures including restocking of fish stock and annual assessment of the value of natural resources. Based on results assessment, the Administration establishes quotas for e.g.; fishing, logging, hunting. A socio-economic study is carried out as part of the update of the management plans.

Romsilva

Romsilva implements sustainable forest management principles in the state forests (48 per cent of total forested area), in accordance with the forest management plans in order to increase contribution of forests to improve environmental conditions and support national economy. It is responsible for the implementation of the national programme for genetic improvement of horses. Romsilva also manages 243 hunting funds. According to the provisions of GEO No. 23/2008 regarding fishing and aquaculture, with the subsequent amendments and completions, Romsilva administers these resources and applies measures for the sustainable management and use to improve natural habitats of salmonids.

Romsilva has a special unit dedicated to providing methodological guidance to national and natural parks under their jurisdiction. Romsilva has 41 forest directorates.

Ten-year agreement is issued between NANPA and Romsilva for the management of national and nature parks. Romsilva has agreements signed with the Ministry of Environment, Waters and Forests for national and natural parks.

The Law No. 57/2007 stipulates that the funding for protected areas should be coming from the state budget, but it is not the case for protected areas managed by Romsilva. During the period from 2012 to 2019, park administrations managed by Romsilva did not receive any funding from the state budget. Funding for the management of protected areas is allocated exclusively from Romsilva, which provides funds generated from its forestry operations. The annual budget allocated by Romsilva to its park administrations has been steadily increasing in the past seven years (Table 11.19). Self-revenue of park administrations constitutes approximately 10 per cent of the total budget. Annual budget is increased over the years. In 2019, over 30 million lei is foreseen to be spent. From this budget, 75–80 per cent is used for staff cost and the rest is used for maintenance and infrastructure. Romsilva is not eligible to receive funds from the Environment Fund. This is linked to the fact that the status of Romsilva is not exclusively a state organization, but more like state-owned enterprise with self-sufficient financial mechanism. Romsilva can invest initial funding for management plan activities but the retroactive reimbursement is not guaranteed.

|----------|--------|--------|--------|-------|-------|--------|--------|-------|-------|--------|

Source: Danube Delta Biosphere Reserve Administration, 2019

The budget allocated for natural parks managed by Romsilva was adequate in the beginning of the establishment of natural parks. But in order to implement fully the management plans the park authorities need to apply to external funding. In total 151 projects (overall funding of US$47.3 million) were implemented between 2012–2019 funded by external sources mostly from the EU Structural Funds. This has significantly improved the quality and scope of activities implemented by the park administrations.

However, recent regulations to access funding puts stricter requirements such as that 40 per cent of the project funding should be spent for active management measures (i.e. ecological reconstruction; artificial net for birds). Some of the activities such as biodiversity monitoring are not considered as active measure. Furthermore, in order to receive funding for projects to be implemented in the protected areas, its management plan should be approved in advance.
Romania is on track in achieving the SDG target 15.2 (by 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally), measured by the global indicator 15.2.1 (progress towards sustainable forest management).

Forest area annual net change rate was 0.23 until 2010, increased to 1.15 per cent until 2015, decreased to 0.41 per cent and reach 0 per cent in 2017. There is no evidence of deforestation in the country since the change rate shows a positive trend until 2010 and starting from 2016 it equals to 0 (afforested areas are equal to areas affected by deforestation), meaning that there is no change.

Changes in the above-ground biomass stock in forest indicate the balance between gains in biomass stock due to forest growth and losses due to wood removals, natural losses, fire, wind, pests and diseases. In Romania, the change indicates an increase from 107.00 tons/ha in 2010 to 207.50 tons/ha since 2016 meaning a positive trend.

The proportion of forest area located within legally established protected areas has increased from 2.22 per cent in 2000 to 37.98 per cent since 2015, which shows a positive trend. In 2000, Romania reported that 86.71 per cent of its forest area is under a long-term management plan, in 2010, 81.92 per cent and since 2015, 80.97 per cent of its forest area is under a long-term management plan. However, most of the forest areas are managed according to the provisions of the long-term management plans.

Forest area certified under an independently verified certification scheme has increased from 914,680 ha in 2010 to 2,728,310 ha in 2018 thus indicating of positive progress towards sustainable forest management.

Other institutions

Local governments have a mandate for the management (including designation) of protected areas of local interest. Beside this, one of the most important achievements of the current reporting period is the strengthening of the administrative system in Natura 2000 sites, resulting from establishment of management structures.

Romanian Waters manages the infrastructure for hydrological surveillance and monitoring of water quality, including monitoring of species and habitats associated with water.

The Ministry of Agriculture and Rural Development has a mandate in relation to biodiversity, through making policy for protection of conservation and/or sustainable use of species and habitats associated with agriculture activities.

The most active public research institutes on biodiversity issues are: Forestry Research and Management Institute, Danube Delta National Institute for Research and Development, National Institute for Biology, “Grigore Antipa” National Museum of Natural History, and other universities.

The National Agency for Cadastre and Land Registration ensures implementation of the INSPIRE Directive. The Ministry of Environment, Waters and Forests is acquiring spatial datasets for protected natural areas, including Natura 2000 sites, in view of optimizing their management.

As result of amendments done to biodiversity framework law, in 2011 the Commission for Speleological Patrimony (MO No. 1044/2012) was established for regulation of activities in caves and karst areas.

NGOs

NGOs play a vital role in the biodiversity sector in Romania. They have access to some external funding. NGOs are flexible, and often work in partnership with the public sector. Most of the biodiversity conservation-related NGOs are associate in a common platform named the Natura 2000 Coalition (Coaliția Natura 2000). Some of the key biodiversity-related NGOs active include: Milvus Group; Romanian Hunting Association, affiliated with FACE Romanian Ornithological Societiediated with Bird Life International; World Wide Fund for Nature – Danube and Carpathians Programme; Local IUCN (International Union for Conservation of Nature) members (Earth Voice, UNESCO Pro Natura and Exploratorii Reșița). Since 2013 Fauna and Flora International has an
active presence in Romania and has been implementing a LIFE+ project in cooperation with the Ministry of Environment and Climate Change (at that time), Romanian Gendarmerie and Zarand Association.

Cooperation of Romsilva with NGOs has been oriented mainly on environmental protection aspects, like enforcing legislation related to illegal cuttings of wood, identification and establishment of protection regime for valuable forest ecosystems, like those included in the National Catalogue of virgin and quasi-virgin forests and the sites included in the UNESCO’s World Heritage List.

**Cooperation on biodiversity conservation issues**

Cooperation takes also as conclusions of written collaborative agreements, such as for example:

- **Collaboration protocol signed 25 February 2014 by the Ministry of Environment and Climate Change (at that time) - Department of Water, Forests and Fisheries and WWF Association Danube - Carpathians Romania Programme on protection of virgin and quasi-virgin forests and preventing and combating the trade in illegally harvested timber. This protocol resulted in the development of the Good practice guide for national operators in view of proper implementation of the provisions of Regulation (EU) No 995/2010 laying down the obligations of operators who place timber and timber products on the market. Another result was the elaboration of risk maps concerning the illegal logging in Romania.**

- **Collaboration protocol signed 3 July 2014 by the Ministry of Environment and Climate Change - Department of Water, Forests and Fisheries, Romsilva, the Institute of Forest Research and Management Planning, WWF Association Danube - Carpathians Romania Programme and Greenpeace CEE Romania on developing and completing in good condition the nomination process of candidate sites for the registration of the virgin and ancient beech forests on UNESCO’s World Heritage List. As a result, eight sites with 12 components covering 24,000 ha and 64,500 ha area of the buffer zone, were included in July 2017 as part of “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”**.

**Neighbouring countries**

Romania is actively participating in the area of cross-border cooperation affecting biodiversity protection and ecological connectivity. The GEO No. 195/2005 on environmental protection sets the principle on developing international collaboration for environmental protection. By means of bi- and multi-lateral agreements Romania collaborates with neighbouring countries for transboundary management of sites.

The European Union Strategy for the Danube Region is the major trans-border cooperation initiative to which Romania is part of. Officially launched in 2011, the Strategy is one of the four macro-strategies existing at the level of the European Union, being co-initiated by Romania and Austria and representing a mechanism for the cooperation of the Danube basin countries for the economic, social and territorial development of the macro-the Danube region.

The Republic of Moldova, Romania and Ukraine collaborate for ecological management for consolidation and for the creation of a cross-border protected area, by framework of the trilateral agreement signed by the three countries concerned, under the auspices of the Council of Europe. In 2018 the International Co-ordinating Council of UNESCO’s Man and the Biosphere Programme has added 24 new sites to the World Network of Biosphere Reserves, between them the first biosphere reserve in the Republic of Moldova, the Lower Prut Biosphere Reserve. Having in view the existing transboundary biosphere reserve between Romania and Ukraine, the Danube Delta Transboundary Biosphere Reserve consisting of the Romanian Danube Delta Biosphere Reserve and the Ukrainian Danube Biosphere Reserve, the Romanian Parliament initiated the discussions for the establishment of a trilateral biosphere reserve between the three countries, Danube Delta – Lower Prut. Romania is thinking to modify the Agreement signed in Bucharest in 2000 by the three ministers of environment to declare the trilateral protected area and to define new common policies on environment protection, culture, education, research and a common management to apply these in the three-biosphere reserve.

In 2019, an international project started between the three countries, led by Rewilding Europe, a Cambridge Conservation Initiative, under the Endangered Landscape Programme. The Project Restoring the Danube Delta,

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Europe’s largest wetland Ukraine, Romania and Republic of Moldova will be implemented during the period 2019–2024.

The cooperation under the Memorandum of Understanding between DDBRA and the Joint Union for the Management of the Natural Regional Park of Camargue was signed in 2016. Within the framework of the Memorandum mutual visits have been organized in 2017 and 2018 to exchange experiences and to develop joint projects.

Regulatory, economic, fiscal and information measures

Fishing permit in Danube Delta Biosphere Reserve

According to the Order on approval of conditions for recreational/sport fishing, the regulations regarding recreational/sport fishing and models of permits for recreational/sport fishing in protected natural areas, issued jointly by the Ministry of Agriculture and Rural Development (No. 159/2011) and the then Ministry of Environment and Forests (No. 1266/2011), recreational/sport fishing in natural fish habitats is allowed on the Danube Delta Biosphere Reserve territory only based on recreational or sport fishing permits issued by DDBRA.

Entrance fees

In 2012, the MO No. 3836/2012 provides the methodology and establish unitary framework to determine tariffs for the i) entrance in protected areas, ii) photographing and filming in protected areas and iii) analysing documentation and issuing opinions on the environmental impact assessment, permits and harvesting activities. Accordingly, each administrator and custodian of protected areas was expected to determine the tariff by considering the specificity of the tourist sighting objective, the services offered, security measures, tourist routes, campsites arranged and maintained and other aspects such as the infrastructure and duration of the visit.

In 2017, the MO No. 1433/2017 amended the previous methodology by setting up the maximum price amount for analysis and verification of documentation for the environmental impact assessment, permits and harvesting activities. The MO also specified that each administrator or custodian of protected areas can propose the amount for entrance fee and fee for filming and photographing by considering the aspects mentioned in the MO No. 3836/2012. By the MO, certain groups of visitors, such as members of local communities, persons conducting research, persons with disabilities, as well as other categories of persons, are exempted from paying the entrance fees.

Therefore, the amount of entrance fees varies for each protected area and varies from 5 to 15 lei (equivalent to €1 to €3). Fees are not a significant source for funding and management and operations of the protected areas. They constitute on average 5 per cent of overall budget of protected areas and are mainly used for the maintenance of infrastructure such as improvement of walking trails and signage.

Financing for biodiversity, forest and ecosystems

Romania does not collect data on the SDG target 15.a (mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems), measured by the global indicator 15.a.1 (b): revenue generated and finance mobilized from biodiversity-relevant economic instruments) and the country does not report on this indicator.

However, the governmental expenditures on natural resources and biodiversity amounted 5.5 million lei (€1.2 million) in 2012 and peaked in 2015 with 111.1 million lei (€25 million) and then decreased to 2.1 million lei (€0.4 million) in 2017. However, these expenditures represent 0.03 per cent of the total governmental environmental expenditures (table 3.10).

11.7 Assessment, conclusions and recommendations

Assessment
Romania has a rich biodiversity and a high proportion of intact natural ecosystems. Almost half of the country’s ecosystem is covered with natural and semi-natural ecosystems. The high density of large carnivores and the extensive forests covering the Carpathian Mountains are the best-known aspects of the biodiversity richness. Romania possesses the largest areas of virgin forests in the EU, undisturbed by human activities. It is remarkable that the country was able to preserve this unique ecosystem, which is one of the last remaining virgin forests in Europe. The results of the second forest inventory show that the forest coverage has increased since the first cycle inventory. The natural regeneration rate is stable. Most of the 29 national and natural parks are located in forest land and more than 2.6 million ha of forest area is included in EU Natura 2000 Network.

With accession to the European Union, the Habitats and Birds Directives, which are the main legal tool to halt the biodiversity loss, are fully transposed. Romania has put forward an objective to increase surface of protected areas through establishing new protected areas, expanding the boundaries of existing protected areas and in particular by designating 606 sites under the Natura 2000 network. Currently, 23.4 per cent of the total territory of the country is under the protected area system, from which 0.66 per cent represents protected areas of national interest, 4.74 per cent the areas where national designated areas overlap with Natura 2000 sites and 18 per cent represents Natura 2000 sites.

Despite the positive trends, biodiversity in Romania is threatened by overgrazing, expanded urbanization, desertification, overexploitation of natural resources, illegal logging, impacts of climate change and extreme events. Moreover, financing biodiversity conservation remains low, about 0.03 per cent of the total governmental environmental expenditures.

The Recommendation 9.1 innovative financing mechanisms to compensate private forest landowners for the restrictions imposed on them is implemented by the GD No. 447/2017 that establishes a compensation paid to forest owners from the funds foreseen under the Rural Development Programmes. The Recommendation 9.2 (a) on the system of compliance and enforcement related to the existing legislation on protected areas is partially implemented as there are still obstacles to implementation. Also, the implementation of the Recommendation 9.2 (b) on adequate financial resources available for training environmental guards and increasing their numbers to control illegal hunting in protected areas, is partially implemented. The implementation of the Recommendation 9.3 is ongoing but at a slow pace. By including intersectoral activities in the National Biodiversity Strategy, the Recommendation 9.4 (a) was implemented. Similarly, the Recommendation 9.4 (b) concerning the carry out a national valuation of ecosystems and ecosystem services with the assistance of the European Union and other interested donors and institutions, was implemented through the MAES.

Concerning the implementation of SDGs targets relevant to biodiversity and protected areas, Romania has made progress and is mostly on track, however, measurements of some indicators are lacking. No data are available for the global indicators 2.5.2, 11.4.1, 14.2.1, 15.4.1 and 15.a.1. In 2017, Romania reported 96.83 per cent for the Mountain Green Cover Index (indicator 15.4.2). The Red List Index (indicator 15.5.1) indicates that in 2020 biodiversity loss is decreasing in Romania. Romania has not yet developed a national target reflecting the Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020 and hence no progress has been reported on the implementation of the global indicator 15.9.1.

Conclusions and recommendations

Biodiversity conservation

The NBSAP for 2014–2020, which was approved in 2013 and updated in 2017, sets the general strategic framework for biodiversity and nature protection in the country, identifying strategic objectives and corresponding actions to be implemented by 2020. An ambitious action plan was also approved, which is expected to be implemented through different sources of funding, mostly from the EU.

The national level Red Lists are yet to be developed due to differing views within the Romanian academic community. NBSAP proposes the implementation of measures to improve ecological connectivity. Several projects have been implemented in that regard to maintain species migration corridors and thus improve connectivity in protected areas. The inventory and monitoring of species and habitats in order to decide on measures for effective maintenance and improvement of species conservation is carried out individually by protected areas, but there is no national level monitoring system.
In Romania, the majority of funding to implement biodiversity conservation and conduct research monitoring comes from external sources, for instance, European Funds.

**Recommendation 11.1:**
The Government should:

(a) Assess the results of implementation of the National Biodiversity Strategy and Action Plan for 2014–2020 and draft a new National Biodiversity Strategy and Action Plan for the coming period;
(b) Develop national level Red Lists and ensure their adoption by the ministry in charge of the environment;
(c) Ensure the elaboration and approval of the list of invasive alien species;
(d) Develop a methodology for the designation of ecological corridors to ensure coherence of conservation actions taken in neighbouring protected areas;
(e) Establish, in cooperation with academia and relevant institutions, a national level system to elaborate studies on species and habitats and monitor their trends;
(f) Increase and secure a dedicated budget for biodiversity conservation.

**Protected areas network**

The protected area management is comprehensive and unique. As at December 2019, more than 1,600 natural protected areas are managed by different institutions including NANPA, Romsilva, DDBRA, local councils and private legal entities. Before NANPA was established in 2016, 40 per cent of all designated protected areas did not have any park administration, i.e. no management activities were implemented in those sites. Therefore, the establishment of NANPA led to coherence in the protected areas system in the country, the management of orphan sites through local structures of NANPA, lobbying for funding from the State budget and guidance to and oversight of all protected areas. However, due to the limited capacity of NANPA, not all planned measures are being implemented.

As at December 2019, not all protected areas have management plans. Some management plans are not approved timely to ensure the implementation of measures and carry out monitoring and assessment, which are essential activities for the long-term management of protected areas. In the absence of approved management plans and without implementing monitoring and assessment, it is hard to assess the impact of economic activities on the state of protected areas. Funding for the implementation of the management plans started in 2016, with funding from the Ministry of European Funds.

The 2018 the Guide for developing management plans of protected natural areas (MO No. 304/2018) making mandatory the new template for preparing management plans for protected areas was found by Romsilva to result in lengthy and cumbersome management plans difficult to prepare and to use by the administrations of protected areas and by other users.

The Law No. 49/2011 approving the Government Emergency Ordinance No. 57/2007 on the Regime of Protected Natural Areas, Conservation of Natural Habitats, Wild Flora and Fauna requests the ministry in charge of the environment to develop and approve the methodology for requesting, calculating and granting compensation to landowners or tenants to compensate for restrictions on land-use imposed in the management plans of the natural protected areas. As at October 2020 no such compensation was made.

Public participation in decision-making on natural protected areas is implemented during public hearings and public opportunity for commenting on draft legal documents, organized by the ministry in charge of the environment, water and forests in line with the Law on Decisional Transparency in the Public Administration (No. 52/2003). As at October 2020 a coordination mechanism for consulting and involving all relevant stakeholders, including Romsilva and environmental NGOs, at early stages of drafting and decision-making in the area or natural protected areas management is lacking.

As at October 2020, the country neither carried out an assessment of ecosystem services, nor developed a methodology for conducting such as assessment with a view to pay for such services the local communities living in protected areas and affected by the restrictions imposed on their land-use.
The current legal framework does not require periodic re-evaluation of the conservation value of the natural protected areas of national interest. At the same time, natural protected areas of national interest from the nature reserves category were designated based on summary templates completed by LEPAs without the support of scientific studies, which in some cases led to predominantly common species being included in protected areas while vulnerable species were left in the adjacent areas.

**Recommendation 11.2:**
The Government should:

(a) Develop a comprehensive long-term strategy for protected area management with a view to provide coherence to the protected area system;
(b) Introduce a system for timely approval of management plans of protected areas;
(c) Introduce a system of regular self-assessment of the effectiveness of management of protected areas, including economic analysis of the impact of economic activities on protected areas;
(d) Re-evaluate the conservation value of the natural protected areas of national interest and, if necessary, revise the conservation objectives that were set at their designation;
(e) Revise the Guide for developing management plans of protected natural areas, approved by the Ministerial Order No. 304/2018, in line with national legislation and best international practice (e.g., IUCN, CBD, EU Directives) to enable the effective and straightforward use of protected area management plans by protected areas administrations and other stakeholders;
(f) Ensure real effective involvement of Romsilva, other relevant stakeholders (such as land tenants, natural resource managers and environmental NGOs) and the public in the decision-making process regarding the management of natural protected areas;
(g) Mobilize resources to strengthen the territorial units of the National Agency for Natural Protected Areas to provide management of protected areas under the responsibility of the Agency;
(h) Develop a dedicated budget for the management of protected areas, especially in Natura 2000 sites;
(i) Develop a national system of ecosystem services assessment that quantifies their value and establish effective mechanisms for granting payments to the landowners or tenants concerned;
(j) Develop effective mechanisms for compensating the economic losses of landowners or tenants in protected areas due to the restrictions imposed by protected area management plans, in line with Law No. 49/2011 approving the Government Emergency Ordinance No. 57/2007 on the Regime of Protected Natural Areas, Conservation of Natural Habitats, Wild Flora and Fauna.

**Forest ecosystem**

Virgin and quasi-virgin forests are strictly protected and included in the National Catalogue of Virgin and Quasi-Virgin Forests established as an instrument to identify, register and protect the valuable forest. As of May 2019, an area of 29,060 ha is officially included in the catalogue and further identification and mapping of virgin forests are on-going.

There is no official confirmation and documentation of illegal logging in the core zone of national parks including the World Heritage Property “Ancient and Primeval Beech Forest of the Carpathian and Other Regions of Europe”. Wood felling occurred in the buffer zone of Domogled – Valea Cernei National Park in the adjacent area of the Site Property, being legal and applied according to the forest management plan. Though not included in the World Heritage site, the adjacent forests also have many more primary forests stands.

**Recommendation 11.3:**
The Government should:

(a) Ensure the integrity of the forest ecosystem by including, to the extent possible, virgin and quasi-virgin forests adjacent to the designated World Heritage Sites in the National Catalogue of Virgin and Quasi-Virgin Forests;
(b) Ensure that, within Romania, logging is and remains strictly prohibited within the World Heritage property “Ancient and Primeval Beech Forest of the Carpathian and Other Regions of Europe”, and that no logging operations are allowed in the buffer zones of the site components if they could have a negative impact on the natural processes of the World Heritage property;
(c) Develop an adequate legal framework on building ecological reconstruction of degraded forest ecosystems, including due to illegal logging, and take measures and allocate funds for its implementation.

Financing for biodiversity, forests and ecosystems

The country does not compile data on total expenditures related to biodiversity, forests and ecosystems conservation and the country is not in position to report this value for the global SDG indicator 15.a.1 (b) “revenue generated and finance mobilized from biodiversity-relevant economic instruments”. The governmental expenditures on natural resources and biodiversity represent 0.03 per cent of the total governmental environmental expenditures.

Recommendation 11.4:
The Government should:

(a) Increase expenditures related to biodiversity, forests and ecosystems conservation;
(b) Ensure that data on expenditures related to biodiversity, forests and ecosystems conservation are collected in order to report on the global SDG indicator 15.a.1 (b) and be used for decision-making processes related to these topics.
Annexes

Annex I: Participation of Romania in multilateral environmental agreements
### Annex I

**PARTICIPATION OF ROMANIA IN MULTILATERAL ENVIRONMENTAL AGREEMENTS**

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### Multilateral environment-related agreements

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Ac = Accession; Ad = Adherence; Ap = Approval; At = Acceptance; De = Denounced; Si = Signature; Su = Succession; Ra = Ratification.