Economic Commission for Europe

Committee on Environmental Policy

Twenty-seventh session
Geneva, 3–5 November 2021
Item 4(c) of the provisional agenda
Ninth Environment for Europe Ministerial Conference:
Pan-European environmental assessment

Information paper No. 4
27 October 2021

Pan-European environmental assessment: draft summary of its key findings and policy messages (summary for policymakers)

Summary

The Working Group on Environmental Monitoring and Assessment has been tasked by the Committee on Environmental Policy with leading a process of consultation on the regular pan-European environmental assessment (ECE/CEP/2017/2, annex II, para. 2 (b)) for consideration by the Committee and leading up to the next Environment for Europe Ministerial Conference.

At its twenty-fifth session (Geneva, 13–15 November 2019), the Committee welcomed the information provided by the secretariat and the United Nations Environment Programme (UNEP) on the next pan-European environmental assessment. Furthermore, it requested the secretariat and UNEP, working in close cooperation with the European Environment Agency, to prepare a limited indicator-based and thematic assessment, and to regularly inform the Bureau of progress made (ECE/CEP/2019/15, para. 37 (k)). At its twenty-sixth session (Geneva and online, 9 and 10 November 2020), the Committee rescheduled the next Ministerial Conference, to be held in Nicosia, for 5–7 October 2022 (ECE/CEP/2019/15, para. 19 (a)).

The present document presents the current draft summary for policymakers of the next pan-European environmental assessment. The section of freshwater is still outstanding and the section on applying principles of circular economy to sustainable tourism will be revised following the receipt of numerous comments from various actors. The sections on environmental finance and the two conference themes are first drafts and lack graphic elements. Some data series used in the assessment will be revised as more recent data become available.

The Committee on Environmental Policy is invited to review the present document.

Summary for policymakers

Formerly "Key findings and policy messages". A further section will be added on freshwater. The sections on environmental finance and the two conference themes are first drafts and lack graphic elements. More recent indicator values will be provided, if available. Further amendments may be necessary in the light of relevant conferences of parties, for example.

1. Greenhouse gas emissions

All pan-European countries commit to reduce greenhouse gas emissions, but net emissions in the region are still rising. Efforts and achievements are unevenly distributed throughout the region.[1] Reductions, which are mostly achieved in the western part of Europe (2014–2018), are three times less than the increase in emissions in the rest of the region. National commitments under the Paris Agreement were renewed by 35 countries in the region with more ambitious targets. However, some countries still do not have firm, quantifiable commitments or mechanisms to follow the progress towards them, which results in significant data gaps.

Recommendation: Governments in the pan-European region should establish the conditions for medium- and long-term sustainable mobilization of funds for climate action both by accelerating the use of available regional and global funds and mechanisms and by creating national financial instruments.

	European Union	Western Europe	Central Asia	Eastern Europe	South-Eastern Europe	**Pan-European region**
Greenhouse gas emissions (2014–2018) (percentage change)	→ (-0.3%)	↗ (-9.2%)	↘ (+13%)	↘ (+4.0%)	↘ (+12%)	↘ (+1.7%)

Note: trend is ↗ improving (emissions falling), → stable or ↘ worsening.

2. Decarbonization

Decarbonization is becoming a strong narrative across the pan-European region, but action lags behind. The use of renewables was increased in 29 countries in the pan-European region in the period 2013–2017, but the region still largely relies on fossil fuels – some 78 per cent of the total final energy consumption in average comes from fossil fuels. The penetration of renewables in the energy mix rises more slowly than the increase in the total final energy consumption in the region. Despite the example of the Montreal Protocol on Substances that Deplete the Ozone Layer, which has had positive effects on human health and the environment and contributed to the reduction of greenhouse gas emissions through phasing out some of ozone depleting substances, the phasing out of hydrochlorofluorocarbons present as coolant in refrigerators and air conditioning systems remains incomplete, especially in countries with economies in transition.

Recommendation: Governments in the pan-European region should eliminate or reform harmful subsidies and incentives, and to develop effective positive incentives to deepen decarbonization, by phasing out fossil fuel subsidies and shifting promotion of investments towards renewable energy.

[1] Throughout the assessment, where feasible and relevant, the following subregions are referred to: (a) European Union, comprising 27 member States, i.e., without the United Kingdom of Great Britain and Northern Ireland; (b) Western Europe, comprising non-European Union high-income countries and including Israel; (c) Central Asia, comprising Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan; (d) Eastern Europe, comprising Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova, Russian Federation and Ukraine; and (e) South-Eastern Europe, comprising Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Turkey.

	European Union	Western Europe	Central Asia	Eastern Europe	South-Eastern Europe	**Pan-European region**
Renewable energy share in total energy consumption (2014–2018) (latest rate)	→ (18%)	↗ (18%)	↗ (4%)	→ (4%)	→ (14%)	→ (13%)

Note: trend is ↗ improving, → stable or ↘ worsening.

3. Ecosystems

The status of ecosystems remains a cause for concern, with no evidence of a clear positive trend. Only a minority of the habitats assessed at the European Union level have a good conservation status, and the overall picture is likely to be similar in the remaining region. The relative share of the particularly biodiversity-rich primary forests has declined significantly over the same period.[2] Forest fragmentation remains an important pressure. There are significant variations in the proportion of sustainable fish stocks. The Mediterranean Sea and Black Sea remain highly overfished, whereas signs of recovery of fish stocks can be observed in the North-East Atlantic Ocean and the Baltic Sea as a result of improved management decisions (see also point 7 below).

Recommendation: Governments in the pan-European region should establish the conditions for medium- and long-term sustainable mobilization of funds for biodiversity and other environmental components both by accelerating the use of available regional and global funds and mechanisms and by creating national financial instruments. Governments should also eliminate or reform harmful subsidies and incentives, and to develop effective positive incentives to mainstream biodiversity conservation across sectors and policies, promoting biodiversity conservation and sustainable use of resources. Further, Governments should ensure that trends in forest area remain positive and take additional measures to safeguard the remaining primary forests and their ecological functionality, for example, by promoting management standards aimed at preserving high-conservation value forest and by enhancing forest connectivity.

	Pan-European region
Primary forests (2015–2020) (change)	↘ (-3.1%)
Naturally regenerating forest (2015–2020) (change)	→ (-0.1%)

Note: trend is → stable or ↘ worsening.

4. Protected areas

At the same time, **the protected area estate in the pan-European region has almost tripled, and the overall forest area in the ECE region has increased by 33.5 million ha over the past 30 years.** The coverage of marine protected areas increased over the period 2000-2019 but is 6.7 per cent for the overall pan-European area (below the 10 percent of Aichi target 11). Despite progress in terrestrial and marine protected areas, overall biodiversity loss continues to occur.

Recommendation: Governments in the pan-European region should consolidate and improve the extended protected area network in the region through investment in management effectiveness, ecological representativeness and connectivity. Further efforts

[2] This trend mostly occurs in Russian Federation, which is also one of the top three countries in the world in terms of area of primary forest.

are needed, in particular in Eastern and South-Eastern Europe, to achieve the target of conservation of 10 per cent of coastal and marine areas in the pan-European area.

	EEA member and cooperating countries, plus United Kingdom	Eastern Europe (without Russian Federation)
Trend in protected area coverage and status (latest proportion)	↗ ☺ (30%)	↗ 😐 (8%)

Note: trend is ↗ improving, while status is ☺ (above Aichi target of 10 per cent) or 😐 (below but close to target).

5. Land use

Land use and land-use change dynamics in the pan-European region continues to be mainly driven by agriculture. Erosion can be further reduced in most affected areas by implementing conservation agriculture. Conservation agriculture practices in the pan-European region may also play an important role in carbon sequestration and raising soil productivity by increasing soil organic carbon content. In Eastern Europe the average rate of soil erosion decreased over the last 30 years following massive cropland abandonment and climate change. In the Russian Federation, the total amount of washed soil and the rate of erosion have been reduced by 56.1 and 15 per cent respectively in the last 30 years due to the widespread abandonment of cropland and lower spring runoff. In Central Asia, wind erosion is a dominant type of land degradation. Land continues to be taken for infrastructure development in the pan-European region, but land take has decreased in most member countries of the European Environment Agency.

Recommendation: Governments in the pan-European region should provide better guidance to farmers on using soil conservation methods in areas of degraded (eroded) soils. Policies should also maintain a judicious balance between soil organic carbon accumulation for higher crop productivity and soil organic carbon storage for climate change mitigation, as this is critical for mainstreaming global sustainable initiatives such as "4 per 1000". Measures should also address the conversion of natural to agricultural ecosystems and the degradation of habitat quality due to biodiversity-unfriendly agricultural practices, for example, by using more targeted use of subsidies and other incentives. Further, Governments should take measures to reduce land take further and consistently.

	European Union	Western Europe	Central Asia	Eastern Europe	South-Eastern Europe	**Pan-European region**
Land take rate (in 2012–2018)	↗ ☹ (0.05%)	↘ ☹ (0.06%)	↗ ☹ (0.15%)	↗ ☺ (-0.23%)	↘ ☹ (0.15%)	↗ ☹ (0.08%)
Proportion of land that is degraded (2005–2019) (net land with improvement)	↗ (39%)	↗ (31%)	↗ (18%)	↗ (26%)	↗ (51%)	↗ (28%)
Soil organic carbon content (2005–2019) (net land with improvement)	↘ (-0.2%)	→ (0%)	↗ (+0.7%)	↗ (+0.7%)	↗ (+0.4%)	↗ (+0.5%)
Stunting among children under 5 years old	→ ☺	no data	↗ ☹	↗ ☹	↗ ☹	↗ ☹

Notes: trend is ↗ improving (for land take, rate is improving if 2012–2018 rate was lower than 2006–2012 rate), → stable or ↘ worsening; status of land take rate in 2012–2018 is ☺ (negative) or ☹ (positive); status of stunting is ☺ (below 3% – UNICEF target) or ☹ (not on track to reach target).

Net proportion of land improved is to be checked. .

6. Marine protection

Marine pollution, both from land-based (for example, nutrients, plastic and chemicals) and sea-based (for example, plastic and oil) sources, continues to be an urgent problem in most sea regions. Beach and marine litter, dominated by plastic, is recognized as a major global threat to coastal and marine ecosystems in most areas, including remote and less populated areas, for example, the Barents Sea. At the same time, climate-induced changes in coastal and marine ecosystems are occurring with as yet unknown impact, such as increasing sea surface temperatures by about 0.2 °C per decade in the North Atlantic and 0.5 °C per decade in the Black Sea (since 1981) and observed acidification of surface water, at a rate of approximately 0.02 pH units per decade, in the sea regions surrounding the European Union (and across the global ocean), except for variations near coasts.

Recommendation: Governments in the pan-European region should take urgent action to reduce key pressures to halt the degradation of coastal waters, marine ecosystems and seas.

	Baltic Sea	Black Sea	Mediterranean Sea	North-East Atlantic
Number of items on beach per 100 m of shoreline, median (2014 – 2019)	78	652	428	105

7. Coastal waters and marine ecosystems

A holistic and ecosystem-based approach to the management of coastal waters and marine ecosystems that addresses the combined effects of multiple pressures is progressively integrating social, economic and governance aspects. Such an approach applies equally to the use of nature-based solutions in sustainable infrastructure for enhancing coastal resilience and its climate-proof functionalities, and to the transition to "blue" sustainable tourism as part of the post-COVID-19 recovery.

Recommendation: Governments in the pan-European region should take urgent action to reduce key pressures to halt the degradation of coastal waters, marine ecosystems and seas.

	Baltic Sea	Black Sea	Mediterranean Sea	North-East Atlantic
Proportion of assessed marine fish stocks of Good Environmental Status	13%	0%	0%	44%

8. Air quality

Some progress has been achieved in the pan-European region regarding air pollution, but increased effort is needed, also in view of potential increased hazards due to climate change. The health impact of long-time exposure to fine particulate matter with a diameter less than 2.5 μm ($PM_{2.5}$) in 41 European countries was reduced by 13 per cent in the period 2009–2018 and that of nitrogen oxides (NO_x) by 54 per cent. However, the number of premature deaths due to ground-level ozone exposure increased in that period by an estimated 24 per cent, possibly caused by higher mean temperatures.

Countries in the region are expanding policies to tackle air pollution. The evaluation and fitness check of existing European Union air quality legislation in 2019 led to proposals to strengthen provisions on monitoring, modelling and air quality plans to achieve cleaner air. The European Union air quality standards will be revised to align them more closely with the World Health Organization (WHO) Air Quality Guidelines, which were updated in 2021. The Russian Federation is implementing the "Clean Air" project, which provides for significant reduction of pollutants in 12 large industrial centres by 2024, as well as a radical modernization of the State system for monitoring air pollution in these cities.

Recommendation: Governments in the pan-European region should develop additional technical and organizational measures to achieve target 3.9 of the Sustainable Development Goals, especially for fine particulate matter and ground-level ozone. Key responses are the sharpening and application of best available techniques to prevent emissions of particulate matter, NO_x and hydrocarbons by industry and emission reduction from traffic (by implementing Euro-6 and 7 measures). Cooperation should be enhanced so that non-European Union countries in the region could have the possibility to benefit from the experience on the European Union zero-pollution action plan. All countries should update ambient air quality standards to align them with WHO guidelines.

	European Union	Western Europe	Central Asia	Eastern Europe	South-Eastern Europe	**Pan-European region**
Ambient fine particulate matter ($PM_{2.5}$) (mg/m^3 in 2016)	☹ (13)	☹ (11)	☹ (25)	☹ (12)	☹ (35)	☹ (16)
Emissions of SOx, NOx and $PM_{2.5}$ (2015–2019)	↗↗↗	↗↗↗	→↘→	↗↗↘	↘↗↘	↗↗→

Note: trend is ↗ improving (emissions falling), → stable or ↘ worsening; status of $PM_{2.5}$ concentrations is ☹ (exceeds WHO air quality guideline of 5 mg/m^3).

9. Waste management

While the waste management hierarchy assigns highest priority to waste prevention, waste generation continues to rise across the region. Even where a strong political commitment for a circular economy exists, such as in the European Union and other western European countries, the generated waste quantities are growing. Recycling rates differ significantly among the countries and are particularly low in Eastern Europe and Central Asia. Municipal waste recycling rates above 45 per cent exist only in a few European Union countries and Switzerland. Progress is being achieved in all subregions, but slowly. Average electrical and electronic equipment waste (e-waste), which contains both hazardous and precious components, is stabilizing in the region as a whole, but continues to increase rapidly in the economically less mature subregions. E-waste collection and recycling are highly deficient across all subregions; the recovery rates are low.

Recommendation: Governments in the pan-European region should support repair, refurbishment and remanufacturing, including through financial incentives such as tax reliefs, in order to reduce waste. These waste prevention efforts would improve resource efficiency. Governments should also equip public administrations with a skilled work force, ready to engage with all sectors of society, and to increase broad access to reliable and detailed information, in order to achieve sound management of chemicals and waste;

	European Union	Western Europe	Central Asia	Eastern Europe	South-Eastern Europe	**Pan-European region**
e-waste generation per capita (kg in 2019)	↗☹ (18)	↗☹ (23)	↘😐 (7.0)	↘☹ (10)	↘☹ (9.9)	→☹ (15)
Total waste per capita	↘	↘	↘	↘	↘	↘

Note: trend is ↗ improving, → stable or ↘ worsening; status of e-waste generation is 😐 (at the global average of 6.95 kg per capita in 2019) or ☹ (above the global average rate).

10. Chemicals

Chemicals play a vital role in the economy today and are essential in paving the way towards a green economy, but it remains difficult to capture what is our full exposure to hazardous chemicals. Chemicals and waste management are at the heart of many solutions to the current challenges we face in our transition to a zero carbon and sustainable economy. The situation is similar with minerals, in particular those used in electric and electronic gear and batteries. An important opportunity to harness economic value for the region and to reduce the region's dependency regarding the sourcing of critical raw materials, which are bottlenecks in the shift towards resilient future economies, exists but it is not yet being tackled.

Recommendation: Governments in the pan-European region should adopt a circular economy approach and strengthen their waste and chemicals management systems.

	European Union	Western Europe	Central Asia	Eastern Europe	South-Eastern Europe	**Pan-European region**
Reporting under Basel, Rotterdam and Stockholm Conventions (average for 2015–2019)	↘ (82%)	↘ (51%)	↘ (33%)	↘ (57%)	↗ (75%)	↘ (68%)

Note: trend is ↗ improving or ↘ worsening.

11. Disaster risk reduction

About 65 per cent of the population in the pan-European region is covered by local disaster risk reduction strategies. Only 15 countries in the region reported that all their local authorities are implementing such strategies under the Sustainable Development Goal target 13.1, while 23 countries, which jointly represent a quarter of the region's population, do not report on that target.

Recommendation: Governments in the pan-European region should strengthen awareness of climate hazard, especially among poorer communities, and establish conditions to report regularly on the Sustainable Development Goal target 13.1 and under the Sendai Framework.

	European Union	Western Europe	Central Asia	Eastern Europe	South-Eastern Europe	**Pan-European region**
Countries having local disaster risk reduction strategies	→ ☺	↗ 😐	↗ 😐	↗ 😐	- ☹	↗ 😐
Countries reporting under target 13.1	😐	☹	😐	😐	😐	😐

Note: trend is ↗ improving or ↘ worsening; status of countries having local disaster risk reduction strategies is ☺ (majority of countries reporting report 100 per cent of local governments implementing DRR strategies), 😐 or ☹ (majority of countries reporting report less than 5 per cent of local governments implementing DRR strategies); status of reporting is ☺ (all countries reporting), 😐 or ☹ (less than a half of countries reporting).

12. Finance

In all countries across the pan-European region for which data are available, government expenditures on environmental protection have increased since 2000, closely following GDP growth. However, in terms of percentage of GDP, public

expenditure for environmental protection (maximum of around 0.8 per cent) is much lower than environmental tax revenues, implying that revenues from environmental taxes are not necessarily earmarked for reducing environmental damages. Nonetheless, environmental expenditures for environmental protection made by governments are only a subset of total environmental protection expenditures in each country. Green bonds have emerged as a tool for financing environmental-friendly projects, by both the private sector and by sovereign governments.

Recommendation: Governments should consider spending on environmental protection in the wider context of environmental and public finance. Environmental taxes should be used to decrease different kinds of pollution, and the income generated should be primordially used to finance environmental protection public expenditures. Governments should use subsidies only when they are really necessary, as they always distort markets and increase public sector deficit, and should periodically reconsider environmental subsidized finance and regularly perform impact assessment analysis of such funding, so that the funds can bring a genuine value added. Besides, Governments can envisage green bonds as complementary tools for environmental financing along more traditional ones such as taxes and fees.

13. Sustainable infrastructure

Sustainable infrastructure investment has been recognized as one of the most impactful strategies to build back better in the post-COVID recovery. There is a recent common understanding that sustainability solutions should be incorporated as early as possible in the strategic planning phase. However, most pan-European countries have yet to develop mechanisms to incorporate sustainability considerations (such as climate risk) and externality accounting (like the cost of pollution, ecosystem services, or biodiversity protection) in the cost-benefit analysis of large infrastructure projects, while this analysis is not a legal requirement in many countries. According to data published by the World Health Organization and UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene in 2021, access to basic drinking water services is consistently above 90 per cent across the pan-European subregions, except in rural Tajikistan where access is below 75 per cent. Sanitation access ranges from 82.3 per cent in rural Eastern Europe to 99.5 percent in urban South-Eastern Europe and Western Europe, the average being 96.3 per cent. The pan-European region shows full access to electricity, and countries have at least over 83.8 percent coverage of 3G telecommunications. The challenges are currently to guarantee that there is an increase in sustainable infrastructure, using nature-based solutions, resource efficiency, recycling and reuse, in an environmentally responsible, socially inclusive and economically viable way. It is important to guarantee that the needs of all stakeholders are identified and addressed, and that infrastructure is flexible, interconnected and relies on real-time information to adapt to the changing conditions (including climate risk, changes in service demand and migration patterns, among others).

Recommendation: Governments should participate in a pan-European effort to create a common understanding of what sustainable infrastructure means and define a common strategy to quantify progress across nations. Governments should devote additional resources to achieve the institutional and technical capacity necessary for the planning, design, execution, operation and decommissioning of sustainable infrastructure projects. Governments should also deploy economic and financial incentives – in the short and medium terms – to support the implementation by the private sector of nature-based solutions into infrastructure projects. Besides, Governments should establish favourable conditions to implement circular economy strategies aligned with or similar to the European Union taxonomy and the Strategic Framework for Greening the Economy in the Pan-European Region in sustainable consumption and production patterns.

14. Tourism and the circular economy

A pan-European circular tourism economy will be more resilient to and better equipped to cope with future crises, be they economic, health-related, or derived from the environmental challenges that the region faces. Circular thinking in tourism is still in its infancy, and opportunities may be most straightforward in sustainable aviation fuels (e-fuels), building, and (food) waste management. Water consumption and production of

wastewater in general, as well as resource usage in building, for interiors, and in amenities are also of concern. The concentration of tourism in some parts of the countries (coastal or lake regions) and its seasonality also pose constrains to many countries. Tourism has the potential for long-lasting positive impacts beyond the sector itself, due to its interlinkages with other economic activities and the direct producer-consumer interaction.

Recommendation: Governments should increase efforts together with entrepreneurs to apply circular economy principles across the tourism value chain, and promote knowledge creation and the sharing of good practices. Direct investment in the wake of the COVID-19 pandemic and in preparation of recovery plans might include the promotion of domestic and nearby country tourism, with the scaling-up of international, long-distance rail infrastructure, and electric charging infrastructure in tourism destinations, facilitating the transition towards renewable energy use by accommodation. Governments should work together to promote closer product loops, which are easier to make circular, and establish incentives to promote resource efficiency and sustainable consumption.

15. Monitoring

Access to information and knowledge to support Government decision-makers, industry and the public taking impact-oriented choices is improving but continues to be challenging in some sectors more than in others.

No set of chemicals' impact-oriented indicators is regularly monitored across the region. There is also a lack of information regarding the impact of chemicals on the efficiency and economic viability of circular economy schemes such as recycling. In the region, capacities to make well informed decisions on chemicals and waste issues are often either missing or expertise is not well integrated into decision-making processes.

In the pan-European region, there are still air monitoring gaps, especially in the measurement and analysis of fine particulate matter. Air emissions measurement and ambient air pollution monitoring have improved in the past decade with more appropriate equipment, advanced portable sensors and network strategies leading to greater efficiency and lower costs of ground-level monitoring stations and are increasingly available.

This assessment reveals many data gaps across the region, with data available for some countries but not others, or no recent data available. Data for some indicators needed for this assessment are not routinely collected.

Recommendations: Governments in the pan-European region should:

(a) Promote the use of appropriate and standardized methods for monitoring air pollution emissions and the public availability of monitoring data in the pan-European region, while also strengthening cooperation and national investment to fill monitoring gaps in countries with economies in transition;

(b) Increase efforts to complement inventories of the number of items of beach and marine litter with information on composition and sources of litter to be able to design more effective measures. In particular, joint efforts should be taken where subregional measures are deemed necessary, as in the Caspian Sea where there is no reliable information on the presence or amount of litter discharged into the coastal or marine environment;

(c) Establish a region-wide chemicals and waste impact-oriented monitoring scheme, as a cooperation between science and policy, to achieve a better picture of the adverse impacts of chemicals on human health and the environment, and to address them;

(d) Employ the revised ECE Guidelines for the Application of Environmental Indicators, provide the ECE set of environmental indicators in accordance with the principles of the Shared Environmental Information System and adopt indicators to cover emerging policymaking themes of importance.