Biodiversity and Protected Areas Assessment
2021
# ECE Biodiversity and Protected Areas Assessment

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Abbreviations

BD  Brčko District
BiH  Bosnia and Herzegovina
BIP  Biodiversity Indicators Partnership
CAMI  Central Asian Mammals Initiative
CBD  Convention on Biological Diversity
CHM  Clearing-House Mechanism
CMS  Convention on the Conservation of Migratory Species of Wild Animals
COP  Conference of the Parties
EEA  European Environment Agency
ESENIA S  East and South European Network for Invasive Alien Species
EPR  Environmental Performance Review
FBiH  Federation of Bosnia and Herzegovina
FSC  Forest Stewardship Council
GBF  Global Biodiversity Framework
GMO  genetically modified organisms
HPP  Hydro Power Plant
IAS  invasive alien species
IBA  Important Bird and Biodiversity Area
IPA  Important Plant Area
ISNC  Information System for Nature Conservation
IUCN  International Union for Conservation of Nature
KBA  Key Biodiversity Area
MGCI  Mountain Green Cover Index
CITES  Convention on International Trade in Endangered Species of Wild Fauna and Flora
LMO  Living Modified Organisms
MEA  Multilateral Environmental Agreement
NAPA  National Agency of Protected Areas
NBSAP  National Biodiversity Strategy and Action Plan
NEA  National Environment Agency
NEN  National Ecological Network
NFI  National Forest Inventory
NP  National Park
NR  National Report
NTFP  on-timber forest products
OG  Official Gazette
PA  Protected Area
PBA  Primary Butterfly Area
PEFC  Programme for the Endorsement of Forest Certification
RLI  Red List Index
RS  Republika Srpska
RSIS  Ramsar Sites Information Service
SAC  Special Areas of Conservation
SCI  Site of Community Importance
SDG  Sustainable Development Goals
SIBE  Sites of Biological and Ecological Interest
SoER  State of Environment Report
SPA  Special Protection Area
UNESCO  United Nations Educational, Scientific and Cultural Organization
VNR  Voluntary National Review
Introduction

This assessment was conducted between 18 June 2020 and 3 June 2021 with the objective of analysing the developments and challenges in the management of biodiversity and protected areas (PAs) in 14 countries that carried out and completed a ECE Environmental Performance Review (EPR) under its 3rd cycle (further 3EPR) since 2014. This includes Albania (2018), Belarus (2016), Bosnia and Herzegovina (2018), Bulgaria (2017), Georgia (2016), Kazakhstan (2019), Republic of Moldova (2014), Mongolia (2018), Montenegro (2015), Morocco (2014), North Macedonia (2019), Serbia (2015), Tajikistan (2017), and Uzbekistan (2020). In the cases of Mongolia and Morocco, the “3EPR” acronym relates to the fact that their first EPRs were carried out according to the methodology of the third cycle of ECE EPRs. Moreover, the draft 3EPR report of Romania (carried out in 2020) has also been analysed for this assessment.

The main objectives of this assessment were to:

• Examine what has been done in the management of biodiversity and PAs;
• Investigate challenges and bottlenecks encountered by countries;
• Identify trends and commonalities in areas of concern and in solutions to address them;
• Identify lessons learned and good practices in improving the management of biodiversity and PAs;
• Foresee possible matters of contention in the management of biodiversity and PAs for the next decade.

Section 1 of this assessment contains an analysis of the situation in 15 3EPR countries, following the ‘standard’ sequence of contents of the 3EPR chapters on biodiversity and PAs.

However, as this assessment was prepared exactly at the end of the United Nations Decade on Biodiversity (2011–2020) and the commencing UN Decade on Ecosystem Restoration (2021–2030), particular emphasis has been put, to the extent possible, on subjects most relevant to the above two global priorities (i.e. trends in species and ecosystems, the effectiveness of countries’ response to threats and challenges encountered, by e.g., designating PAs, restoring degraded ecosystems, ensuring legal protection of habitats and species, the development, adoption, and actual implementation of related national strategies, programmes and action plans on the ground).

Section 1 also compares the quality of previously concluded 3EPRs (e.g., in terms of adequate coverage of issues, credibility of data provided), which would then facilitate the design of the fourth cycle of the ECE EPRs.

Section 2 contains an analysis of the state of implementation of EPR recommendations related to biodiversity and PAs made since the first EPR by each of the above 15 countries. Section 2 also evaluates
the experiences of countries and measures taken, or not yet taken, to achieve relevant Sustainable Development Goals (SDGs) and corresponding biodiversity-related SDG Targets.

Almost every sub-section of Sections 1 and 2 includes not only the evaluation of the current situation and progress achieved by particular countries, but also methodological remarks, conclusions, and resulting recommendations for the fourth cycle of EPRs for consideration by the ECE EPR team designing and upgrading the future EPRs, as well as experts on biodiversity and PAs involved in future EPRs.

Section 3 briefly summarizes the conclusions of Sections 1 and 2, with a focus on identifying current trends in biodiversity and PA management, commonalities in areas of concern, most common challenges and bottlenecks, as well as lessons learnt, country experiences and best practice examples.

Section 4 concerns important issues for the preparation and upgrading of the fourth cycle of the ECE EPR Programme, i.e. forecasting future trends and hot issues in biodiversity management and recommending possible improvements in the structure of future EPRs.

Considering the most recent new challenge for mankind, Section 4 of this assessment ends with a brief analysis of the possible impact of the COVID-19 pandemic on attitudes and policies related to sustainable development, the state of environment, biodiversity and PAs, as well as its direct impact on the EPR process.

This assessment has been based on the analysis of the contents of the 3EPR chapters related to biodiversity and PAs, as well as other relevant chapters (e.g., on the implementation of international agreements and commitments, on legal, policy and institutional framework, on environmental monitoring, climate change mitigation and adaptation, forestry, tourism), especially in cases when 3EPRs did not include a chapter on biodiversity and PAs (3EPRs of Montenegro, and Serbia).

Moreover, the information provided under 3EPR has been supplemented by the information gathered through the review of the relevant contents of the Voluntary National Reviews (VNRs) of the achievement of the UN 2030 Agenda for Sustainable Development, submitted by all countries in focus of this assessment (in 2016 by Montenegro, in 2017 by Belarus and Tajikistan, in 2018 by Albania and Romania, in 2019 by Bosnia and Herzegovina, Kazakhstan, Mongolia and Serbia, and in 2020 by Bulgaria, Georgia, Republic of Moldova, Morocco, North Macedonia, and Uzbekistan).

Furthermore, in mid-July 2020, 14 3EPR countries (with the exception of Romania because its 3EPR has not yet been finalized) were invited to carry out their voluntary self-assessment of the progress achieved so far in the implementation of the 3EPR recommendations and achievement of relevant SDGs. This was carried out by the ECE EPR team with the intention that such new inputs could possibly supplement and update the information made available in VNRs (some dating back to 2016 and 2017), in order to ensure that this assessment reflects, to the extent possible, an accurate current situation (as of late 2020).

By the self-assessment information cut-off date (15 January 2021) as many as 11 out of the 14 invited countries (except for Belarus, Mongolia, and Tajikistan) positively responded and either provided additional inputs or indicated other documents, e.g., their 6th National Reports (NR) to the 1992 Convention on Biological Diversity (CBD) as sources which could possibly indicate the progress in achieving CBD Aichi Targets (which are often corresponding with relevant SDG Targets).

Last, but not least, in several cases the above information has been verified, supplemented, or updated on the basis of different other accessible sources, e.g., the Ramsar Sites Information Service (RSIS), United

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2. [www.cbd.int/convention/text/](http://www.cbd.int/convention/text/)
Nations Educational, Scientific and Cultural Organization (UNESCO) databases, or publicly accessible national databases on biodiversity.

Sections 1 and 2 of this assessment always clearly indicate and duly acknowledge the source of information, deriving either from 3EPRs, VNRs, additional information kindly provided by countries in late 2020 to the ECE EPR team, and other available databases and information sources used, including the most recent 6CBD NRs.

However, 6CBD NRs have been examined only if explicitly referred to by particular countries, or in the case of countries which did not respond to the ECE invitation (otherwise the analysis of the entire contents of all relevant 6CBD NRs for the purposes of this assessment could take additional months and further complicate its structure). The only exception from the above ‘self-limitation’ are sub-sections 1.4. and 1.5, where all available 6CBD NRs have been examined in order to verify, provide, compare, and analyse the most update information (as of early 2021) concerning trends in the development and management of ecological networks, perceived as another, easily measurable indicator of achievement, indicating the ‘country response’.

The outcomes of this assessment can be used for several purposes, including to:

- Support the preparation of the fourth cycle of the ECE EPR Programme;
- Serve as input into the conclusion of the United Nations Decade on Biodiversity (2011–2020) in the form of an ECE Executive Secretariat opinion editorial and/or blog on “biodiversity management through the lens of ECE EPRs;”
- Share country experience and good practices in biodiversity management, which could serve as examples of acceleration actions in support of efforts to speed up the achievement of SDG biodiversity-related targets;
- Provide background information to support discussion of a regional or sub-regional workshop on progress and solutions in implementing biodiversity-related EPR Recommendations, to be organized in 2021 or 2022, subject to availability of funds and in line with the COVID-19 international situation;
- Support preparation of a thematic calendar on ecosystem restoration with a view to promote the EPR Programme in 2021 or 2022.
1. Assessment of efforts aimed at improving the management of biodiversity and protected areas in countries that carried out an ECE EPR since 2014 (during the United Nations Decade on Biodiversity, 2011–2020)

This sub-section analyses, to the extent possible, the current situation and country performance in 15 3EPR countries as of late 2020, mainly based on their 3EPR reports, VNRs, additional information provided by countries in late 2020 to the ECE EPR team in the process of self-assessment and their most recent CBD National Reports (if explicitly indicated by particular country). However, concerning the trends in the development and management of ecological networks, all available 6CBD NRs have been examined, as well as accessible national databases, to provide and compare the most update information (as of early 2021).

Particular emphasis has been put on subjects most relevant to the approaching UN Decade on Ecosystem Restoration (2021–2030), i.e. the current situation and recent trends in species, habitats and ecosystems, and the ‘country response’ (e.g., designating PAs, granting legal protection status to threatened species and fragile habitats; development, adoption, and effective implementation of national strategies, programmes and action plans aimed at the restoration of degraded ecosystems, and recovery of species).

Methodological remarks

The availability of data on trends in species and ecosystems, as well as natural impacts and anthropogenic pressures varied among countries, mostly due to the insufficient development, performance and gaps in biodiversity and ecosystem monitoring networks, which is a common challenge for most countries reviewed under 3EPR. Furthermore, in some countries, such data can either be dispersed among a multitude of sources, though often unavailable in a digital format, absent in official statistics, or publicly unavailable (in some cases the access to such data are restricted). Finally, even if published, such data might simply not be credible. Hence, regardless of the efforts made by EPR experts, a comprehensive description of the state of a particular issue, much less the changes over time and recent trends, is often not possible.
Recommendation for the fourth EPR cycle:

As the EPR process is aimed at the assessment of the country performance, the ideal approach would be to assess not only the current state and, if possible, recent trends, but also the country response to identified threats and pressures (national strategies, action plans, and measures applied in order to prevent or mitigate the adverse effects of such threats and pressures) and to evaluate the effectiveness of such a response in order to modify it accordingly.

1.1 Trends in species and ecosystems

1.1.1 Species

**Species diversity**

**Methodological remarks**

Any comparison of the number of species between reviewed countries could be misleading and redundant, taking into account the purposes of this assessment, as the number of flora and fauna species is first and foremost dependent on the location of the country within the particular bioregion, including ecoregions of different natural conditions and features (e.g., geology, topography, soils, climatic and water conditions, vegetation) which determine the variety of habitats, their biotic composition and ecological processes. The territories of the 15 countries reviewed during the third cycle of EPRs encompass areas belonging to many different terrestrial, freshwater, and marine ecoregions, including many floristic and zoogeographic provinces of the different species richness, rate of species endemism, as well as the ecoregion conservation status.

Secondly, the overall high diversity of species (in numbers of species) does not necessarily indicate the naturalness of the habitat. For example, the biological diversity indicators can be considerably higher in semi-natural habitats largely altered by human settlements and economic activities in the countries of the Central and Eastern Europe than in the natural habitats of the Pamir Mountains or the Gobi Desert.

**Coverage of species diversity subject in 3EPR reports**

The data on species diversity (usually the approximate total numbers of flora, fauna, and fungi species, which occurrence has been noticed in the country, not necessarily always confirmed by recent national-scale research and nature inventories conducted in the field) are available in the majority of assessed 3EPR reports, except for Bosnia and Herzegovina (only the approximate number of vascular flora species has been provided), Tajikistan (due to the lack of reliable and comprehensive information), as well as for Montenegro and Serbia (the EPR reports did not include a separate chapter on biodiversity and PAs, neither under the 2EPR nor 3EPR cycles, the last time it was covered was under the 1EPR of Yugoslavia in 2002).

**Trends in species diversity**

Trends in overall species diversity have not been assessed, for any of the 3EPR countries.

**Resulting recommendations for the fourth EPR cycle**

The assessment of trends in overall species diversity could, if really necessary, be achieved by comparing data on species diversity available in several subsequent EPR reports (e.g., since the 1EPR), but only in case all previous EPRs of the respective country contained such data, preferably for each class and order of the taxonomic rank.
However, such a general assessment, where the quality largely depends on the current availability of accurate data (which is not always the case in EPR countries) might not necessarily indicate the real trends, as new species and sub-species are still being discovered, while some others could either truly disappear or simply not be observed over a longer period. Secondly, such trends in overall species diversity, even if properly assessed, might not necessarily result from the country’s performance, the evaluation of which is the main aim of the EPR process.

Hence, the overall species diversity in the reviewed country should rather be perceived as the information necessary to introduce the biodiversity subject than an issue to be carefully measured and assessed by analysing possible trends.

**Threatened species**

**Methodological remarks**

When assessing the conservation status of threatened species, the EPR has to distinguish between species whose viability and survival are threatened at the global level (usually assessed by the Red List of Threatened Species of the International Union for Conservation of Nature (IUCN)), regional, national or local level (however, depending on the approach, “local” can either mean species whose survival is threatened in a particular country, or locally endemic species – see the next section).

The IUCN Red List is a particularly useful source for EPR assessments of countries which have not yet adopted their national Red Lists and not yet published resulting Red Books. In addition to the list, IUCN provides summary statistics on the populations of red-listed species in each category, by taxonomic group and by country. Moreover, the IUCN coordinates two regional assessment initiatives, for the European and Mediterranean regions. It should be reminded that the IUCN uses a specific division into geographical regions, where Belarus and the Republic of Moldova belong to the “North Asia” land region (together with the Russian Federation and Ukraine).

However, it should be noted that not all plant, fish, molluscs and other invertebrate species have so far been successfully assessed for the IUCN Red List. Therefore, the flora, fungi and fauna of a particular country can actually include many more species globally threatened by extinction, which have not yet been assigned relevant global Red List threat categories by the IUCN. Similarly, due to missing or incomplete data from recent field research and inventory works, many other species are temporarily categorized only as data deficient (DD), despite their rarity status confirmed by regional or national scale research.

The above reservations can well be illustrated by the example of Morocco (still having no national Red Data Book), which, accordingly to its EPR, harboured 1,189 species included in the IUCN Red List (as of December 2012), where 83 species had been assigned the DD category. Simultaneously, due to the gaps in knowledge, the population status of 38 per cent of critically endangered (CR) species, 36 per cent of endangered (EN) species, 23 per cent of vulnerable (VU) species, 30 per cent of near threatened (NT) species and 26 per cent of least concern (LC) species were unknown at that time, which totalled as many as 299 species of unknown population status, thus more than 25 per cent of the total number of species occurring in Morocco and listed by the IUCN.

It should be noted that the global IUCN Red List of Threatened Species takes into account the global perspective. Hence, a species assessed by IUCN as LC at the global scale can seriously (or even “critically”) be threatened by extinction in a particular reviewed country.

Last, but not least, the global IUCN Red List often does not include locally endemic species, which are usually most threatened by extinction.

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3 [www.iucnredlist.org/](http://www.iucnredlist.org/)
4 [www.iucnredlist.org/resources/summary-statistics#Summary%20Tables](http://www.iucnredlist.org/resources/summary-statistics#Summary%20Tables)
This is why the national Red Lists and resulting Red Books, if available, are often the best sources to assess the trends in populations of threatened species at the national and local scales. However, it should be noted that such national Red Lists do not always follow the internationally recognized IUCN Red List methodology (e.g., not in Bosnia and Herzegovina or Uzbekistan). Furthermore, the national Red Lists and resulting Red Books often contain outdated information, thus an apparently constant trend in the number of species listed in subsequent editions may simply indicate the lack of regular monitoring and resulting data feed and updating. This would particularly apply to countries where Red Books are simply “regularly re-printed” without a preceding revision process (like in Kazakhstan) or based rather on the literature review than the most recent research results.

On the other hand, even if the increase in the number of threatened species listed in subsequent editions of the national Red Data Books is observed, it does not necessarily indicate the increased threat to the survival of the listed species, as such an increase can often result from, for example, the changed methodology, enlarged scope of the taxonomic assessments, or the recent discovery of species (in particular local or regional endemics) not previously known to science.

The proper assessment of the species conservation status and trends requires regular and permanent monitoring conducted throughout the whole country territory, which is a common challenge for many of the reviewed countries. Some EPR countries have neither developed operational national biodiversity monitoring systems, nor implemented state monitoring programmes on rare and threatened species. In such countries the research on threatened species is most often based on short- and mid-term projects, which does not provide for the continuity of research and resulting availability of longer data series. Some countries (e.g., Georgia, North Macedonia) conduct research solely in existing PAs, while the remaining part of the country is not adequately covered. In some cases, the size of country territory confronted with the limited available funding and human resources either make the regular research on species impossible (like in Mongolia, where the regular nationwide assessment of species of different biomes has not been continued since 2010) or significantly limit the geographical scope of assessments. For example, field inventory works on flora and fauna of Uzbekistan were most often “one-off surveys” undertaken in sequence for administrative regions (usually carried out over a period of two years in each region, but not repeated and verified in the subsequent periods). As a result, once the last regional inventory is completed, the information on species previously gathered in the other administrative regions would already be outdated.

In other words, the credibility of information on threatened species in the national Red Data Books to a large extent depends on their regular periodic verification and updating, which is often impaired by the lack of operational biodiversity monitoring systems, monitoring equipment and highly qualified personnel available for carrying out regularly repeated field nature inventories. However, CBD Article 7 requires the monitoring of the components of biological diversity by the Parties, with particular attention paid to those requiring urgent conservation measures.

In the situation when the current trends for threatened species cannot properly be assessed, the adequate species conservation action plans and resulting protective measures can neither be planned, nor implemented or applied. Nonetheless, the species conservation priorities remain clear – countries which are the refuges for the largest remaining viable populations of globally threatened species (e.g., the saiga antelope and sociable lapwing in Kazakhstan, the Asiatic wild ass and goitered gazelle in Mongolia) are the ones particularly responsible for the survival of these species. Moreover, national priorities should include other globally or regionally threatened species, as well as endemic species (see the next section).

Similarly, as in the case of species diversity, the EPR’s purpose is not to identify the number of threatened species occurring in a reviewed country, much less compare these numbers between different countries. What really needs to be evaluated is the awareness of threats to species survival, country approach and response, and the effectiveness of legal and protective measures undertaken, if any, both inside legally
designated PAs and beyond their boundaries, in the remaining ‘non-protected’ part of the country’s territory.

**Coverage of threatened species subject in 3EPR reports**

The data on threatened species is available in all assessed 3EPR reports, including Serbia. In the case of the three countries which have not adopted their national red lists prior to 3EPR, the information on threatened species was mainly based on the current IUCN Red List edition (Morocco), draft national Red Lists (North Macedonia) or legal acts (Montenegro: Decision on placing some plant and animal species under protection, OG 76/06).

**Trends in threatened species and 3EPR country performance (on the basis of the 3EPRs, VNRs and additional information provided in 2020 by countries)**

The 3EPR of Albania noted the number of threatened 319 plant and 109 animal species red-listed by the IUCN, the number of species protected by national legislation, on updating (in 2013) the Red List of Fauna and Flora in accordance with the IUCN criteria, on the extinction of 2 plant and 4 mammal species, disappearance of 17 nesting bird species, decreasing trends (over 50 per cent decrease) in populations of 4 plant and some 122 vertebrate species over the last 25 years, development of action plans for 6 single species. It also mentioned the lack of human and financial resources for the development of action plans for other species, such as migratory birds, and that ‘species reestablishment’ projects have not been implemented. The information on the effectiveness of species conservation action plans implementation and the enforcement of species legal protection outside PAs was missing.

The 3EPR of Belarus, Chapter “Introduction”, noted (that Belarus harboured 54 flora and 16 fauna species globally categorized as CR, and that some species (including the mute swan and aquatic warbler) have successfully been protected as the result of a number of conservation projects, and therefore were removed from the Red Data Book. However, Chapter 7 on biodiversity and PAs indicated that despite protective measures, the population of most globally endangered bird species continued to decline. Indeed, between 2000 and 2013 the number of aquatic warbler singing males decreased from 6,000–10,000 in 2000 to 3,100–5,600 in 2013.

In 2014 Belarus published the fourth edition of its Red Data Book, containing a higher number of plant and animal species than previously recorded (303 vs. 293 and 202 vs. 188 respectively). Protective status is granted to rare and threatened species by the 2003 Law on Plant World, and 2007 Law on Wildlife. Between 2011 and 2014 Belarus adopted conservation plans for 31 plant and 11 animal species, as well as management plans for each of the eight micro-populations of the European bison. Hence, only the information on the effectiveness of the above action plans, and on measures for the enforcement of species legal protection outside PAs was missing for Belarus in its 3EPR. According to 2017 VNR by Belarus as many as 49 action plans for the conservation of rare and endangered wild plant and animal species, and management plans for selected populations were under implementation.

The 3EPR described Bosnia and Herzegovina as having “higher percentages of endangered plants (19 per cent) compared with other European countries”, harbouring also 74 per cent of fungi species red-listed by IUCN for Europe, but did not elaborate further on this subject. There was no national red list adopted at the state level, while the Red Lists of endangered species by the two entities (of plants, animals and fungi of the Federation of Bosnia and Herzegovina (FBiH), and of flora and fauna of Republika Srpska (RS)) were not harmonized, used different methodologies mostly non-compatible with the one by IUCN and contained different numbers of species (658 vs. 818 vascular plant, 36 vs. 46 fish, 40 vs. 304 bird, 6 vs. 25 reptile, 4 vs. 20 amphibian, 40 vs. 304 bird, 27 vs. 57 mammal, and 11,896 invertebrate vs. 273 insect species respectively). Moreover, the Red List by RS did not assess the conservation status of red-listed species. Hence, due to the lack of data, the 3EPR information on rare and threatened species occurring in the country was not precise, the status of their populations remained unknown, while the information on the
legal protection of threatened species, or the adoption and implementation of any species conservation action plans was missing.

In 2020 Bosnia and Herzegovina provided the self-assessment on the implementation of the 3EPR recommendations, according to which a Rulebook on protection measures for strictly protected species and subspecies was adopted (Official Gazette (OG) of FBiH, No. 21/20). In contrast, Chapter 9 on biodiversity and national ecological network of Bulgaria provided more comprehensive information, for example on the legal protection of 574 vascular plant and 483 animal species on the publication of the 2nd edition of the Red Data Book, not only of plant and animal species, but also of habitats. The 2015 Red Data Book, based on sound scientific assessments, lists a considerably higher number of animal species and subspecies than previously (over 400 vs. 157, due to changed methodology and the enlarged scope of taxonomic assessment) and for the first time includes invertebrates and 251 fungi species. Moreover, it contains detailed distribution maps and is available in English and online. The rapid decline in sturgeon, bat and some bird species, was reported, while the trends in other species (as well as habitats) became known in 2017 upon the repetition of Natura 2000-related mapping programme (its 2006–2013 edition allowed to gather baseline data).

Furthermore, 3EPR Chapter 4 on the implementation of international agreements and commitments noted on several species conservation action plans adopted or developed in the frame of the 1979 Convention on the Conservation of Migratory Species of Wild Animals (CMS), however not yet on the effectiveness of such (as their timeframe is usually set for 2017, 2022 or 2023, their evaluation can possibly be performed under the fourth EPR cycle).

3EPR section 9.2 noted the designation of “microreserves” (protected sites) in 2011–2015, under the EU Life+ Programme, aimed at the conservation of rare and threatened plant species of national importance, which is obviously a best practice example, worth promoting among other countries under the next EPR cycles.

According to the 2020 VNR by Bulgaria, as many as 61 action plans for priority species of animals and plants were adopted in 2013–2019, guiding their conservation.

Georgia adopted its first Red List (containing 56 plant, and 141 animal species) in 2005, which is therefore considered outdated. 3EPR is not precise on the number of red-listed animals, its “Introduction” chapter noted 14 fish, 35 bird, 11 reptile, 2 amphibian, and 29 mammal species (which accounts for only 91) which include 44 IUCN red-listed vertebrate species, while Chapter 6 on biodiversity and PAs confirmed the total number (141), but mentioned only birds, reptiles and mammals (75 species). It also mentioned four already extinct species and five species (lynx, leopard, striped hyena, red deer and wild goat) critically endangered at the national level (only leopard is globally categorized as vulnerable by the IUCN, no longer observed in Georgia since 2003), and provided estimates of population size (monitored solely in PAs) for two species.

The legal protection of red-listed species in Georgia has not been clarified in its 3EPR, as its two chapters provided different information. Chapter 1 on the legal, policy and institutional framework, noted that the ban on hunting the endangered and red-listed species had been lifted by amending the law in 2011, but already in 2012, this amendment was abrogated (in response to harsh criticism from the NGO community). Moreover, Chapter 6 dated the said amendments for September 2012 and emphasized that, despite the later revisions (which again banned hunting inside national parks), the Government’s interpretation of the current wording was that commercial hunting of species included in the Red List is allowed (while the ban on hunting in national parks might result in potential re-designation of some into other PAs categories). Chapter 6 mentioned the elaboration of national conservation action plans for numerous species (some of them were implemented, e.g., for the leopard).

The 3EPR of Kazakhstan stated the occurrence of 16 plant and 66 animal species globally threatened by extinction (thus red-listed by IUCN), the adoption in 2006 of the national lists of rare and endangered flora and fauna species (including 387 flora and 224 fauna species) and the resulting publication of several
Kazakhstan’s 3EPR noted the development of species management plans for globally important bird species and populations of migratory species, and on the implementation of several state species conservation programmes and projects, undertaken by the Government in cooperation with relevant scientific and academic institutions, as well as national ecological NGOs, supported by the international community. Chapter 9 also reported on the successful reintroduction of 2 fauna species previously extinct in Kazakhstan (the Asiatic wild ass and Bukhara deer), current initiatives aimed at the reintroduction of the Przewalski’s horse and forming new local populations of the Asiatic wild ass, as well as plans for the introduction of the EN Amur tiger from the Russian Federation. However, the information on the enforcement of threatened species protection outside PAs was missing, in particular for plant species and communities and neglected in the national legislation (see section 1.6.1. on the legal framework).

The 3EPR of the Republic of Moldova did not refer to the IUCN Red List, but to the national Red Data Books and results of long-term research carried in preparation for the adoption of the new revised and updated national red list (expected by the end of 2013). Chapter 9 on biodiversity and PAs provided valuable information on changes in the conservation status of selected groups of species (lichens, fish, birds, and mammals) by comparing the total numbers of species and those assigned CR, EN and VU threat categories in 2005 and 2010, and noted trends in populations of selected ones: the otter and wild cat (both increasing in numbers); European mink; steppe polecat; and several amphibian, reptile, and bird species (declining trends). Chapter 9 also mentioned a major improvement in the legal framework “regulating protection, use and restoration of species of plants and animals which were rare or on the verge of extinction, and which were included in the Red Data Book of 2005”, but did not further elaborate on this subject, nor mentioned any action plans or programmes targeted at the conservation of threatened species.

In the course of the self-assessment in 2020, the Republic of Moldova indicated its 6CBD NR, which referenced the formal adoption and publication of the 3rd edition of the national Red Book, containing 208 species of plants and fungi (incl. 150 angiosperm, 1 gymnosperm, 14 pteridophyte, 7 bryophyte, 8 algae, 14 basidiomycete, and 14 ascomycete species), thus 82 plant and fungi species more than in the 2nd edition of the Red Book. The Red Book also contained 219 species of animals (incl. 30 mammal, 62 bird, 9 reptile, 9 amphibian, 23 fish, 1 cyclostome, 79 insect, 1 collembola, 1 crustacean, and 3 bivalve species), that is 103 species more than in the 2nd edition of the Red Book.

6CBD NR also noted that the Institute of Zoology developed 3 Management Programs for Conservation of Species concerning globally and regionally CR European mink Mustela lutreola, EN Bombus fragrans, and VU sterlet Acipenser ruthenus, on the basis of the analysis of their biologic characteristic, rarity status, distribution and range of their occurrence in the country, as well as threats to their favourable status in the Republic of Moldova.

Mongolia harboured 1 plant and 41 animal species considered globally threatened and red-listed by IUCN. The third edition of national Red Lists of flora and fauna (for the first-time following guidelines for adopting IUCN criteria at the regional level) was adopted in 2006–2011, including 110 vascular plant, 11 fish, 2 reptile, 4 amphibian, 20 bird, and 21 mammal species considered threatened in Mongolia. EPR Chapter 11 on biodiversity and PAs listed all above animal species and noted trends in populations of the selected ones (declining for the wild Bactrian camel, saiga antelope, argali sheep, goitered gazelle, and Siberian

musk deer, fluctuating for the snow leopard, stable for the Asiatic wild ass and Gobi bear, and increasing for the reintroduced Przewalski’s horse).

The 2012 Law on Fauna identified protected “very rare” animal species, while the 1995 Law on Natural Flora granted legal protection to “extremely rare” plant species in danger of extinction (listed in an appendix), and duly considered the need for the protection of threatened plant species also outside PAs, for example by defining other types of “areas important for maintaining environmental and ecological balance”, where the use of all flora species for commercial purposes is prohibited (including green zones in cities, villages, and other settled areas; areas within a 2 km range of the source of a river or stream and the bank of a lake or pond; extremely rare animal habitats; oases; areas with degraded plant cover; areas important for protection from sand movement and soil erosion protection strips). The above is a best practice example worth sharing with the other 3EPR countries. Mongolia implemented several national action plans and programmes for the protection of rare and/or endangered species (concerning e.g., argali sheep, saker falcon, snow leopard, saiga antelope, Siberian musk deer, red deer, and Gobi bear), but reliable information on their effectiveness was missing.

The 3EPR of Montenegro noted the occurrence of threatened 2 higher plant, 26 fish, 12 bird, and 6 mammal species, and differentiation of the level of protection (strictly protected vs. protected) of wild flora, fungi and fauna species in the 2008 Law on Nature Protection. This Law defined the deadline for finalizing the national red lists by 2011 (as of February 2014 such were not yet adopted). However, some plant and animal species were placed under legal protection on the basis of Decision OG 76/06. As 3EPR did not include a separate chapter on biodiversity and PAs, more information on threatened species and their populations was not available.

According to the 6CBD NR by Montenegro “As for the measure of preparation and implementation of the Action Plans for the most endangered species in the period from 2014, the following have been drafted:

- **Cross-border action plan for the protection of bats on Skadar Lake** (GIZ CSBL project).
- **Action Plan for brown bear will be drafted in the coming period within the project “Protection of brown bear in Dinaric Alps”** (Centre for the Protection and Research of Birds, supported by MAVA foundation).

However, the above 6CBD NR (dated December 2018) did not further elaborate on the status of these species action plans prepared since 2014, neither on their formal adoption nor implementation on the ground. In addition to this, it did not explain the rationale for developing a conservation action plan for the brown bear by an NGO specialized in the protection and research on bird species.

As for Morocco, its EPR noted the occurrence of 1,189 IUCN red-listed species and provided information (on trends in populations of these species; however, these species were most probably only those assessed at a global scale, thus not necessarily reflecting their actual situation and conservation status in Morocco. Morocco’s EPR mentioned the lack of expertise, infrastructure and human resources (taxonomists), resulting in the absence of credible data, national red data books, and inadequate knowledge on certain groups of species (except for birds and mammals). This made the assessment of their status and trends difficult. An additional challenge was the unavailability of information on the flora of Morocco, though it was assumed that “it is understood that this work is in progress”.

The 2003 Law No. 11-03 on the Protection and Conservation of the Environment listed species which require specific protection; prohibited activities posing a threat to endangered, threatened or rare species; and regulated their exploitation, utilization and trade in such species. However, the information on the actual enforcement of these regulations or any species conservation action plans or programmes was missing.
According to the draft (fourth cycle) EPR of Morocco, several species conservation programs have already been adopted, e.g., forgazelles, the northern bald ibis (EN), Barbary macaque (EN), Barbary sheep (VU), and several marine species.

**North Macedonia** harboured 4 plant and 120 animal species (13 fish, 2 reptile, 13 bird, 71 mollusc and 15 other invertebrate species, and 6 mammal) globally threatened by extinction, and 113 species of vertebrates included in the European Red List. The assessment of their status and trends in populations was not possible due to the lack of credible data. However, the 2014 5CBD NR noted negative trends in populations of several fauna species between 2003 and 2013 (including the decline in the local populations of regionally endemic Balkan chamois, which is still a hunted game species).

At the time of its 3EPR, North Macedonia had no national red list and therefore could not publish resulting red data books. The country used the 2011 lists of strictly protected and protected wild species (though mostly based on assumptions and historical data), containing 194 strictly protected species (51 flora, 9 fungi and 134 fauna species) and 820 protected species (151 flora, 75 fungi and 594 fauna species). However, the relevant provisions of the 2004 Law on Nature Protection on granting temporary protection for species being evaluated for their proclamation as strictly protected or protected were neither enough precise nor effective (see section 1.6.1. on the legal framework).

Several species conservation action plans have been adopted (and possibly implemented) in North Macedonia, e.g., for the Prespa trout, Prespa barbell and brown bear. Some other action plans (e.g., for the Balkan lynx) were still drafts at the time of the 3EPR, while the preparation and implementation of action plans for conservation of threatened species identified in red lists was to be achieved either by 2023 (accordingly to Action 12.4 of the 2018 NBSAP for the period 2018–2023) or between 2024 and 2027 (accordingly to activity No. 1.3.4 under the 2018 National Strategy for Nature Protection for the period 2017–2027), which can possibly be verified and evaluated under the fourth EPR cycle.

During the self-assessment of the implementation of the 3EPR recommendations, carried out in 2020, North Macedonia noted the development in 2019 of the first complete national Red List (publicly available online), including 46 reptile and amphibian species and 14 plant species, which provides scientific information and analysis of the state, trends and level of threat to species in accordance with the IUCN criteria. The National Red List of Fungi and National Red List of Large Mammals (lynx, bear, wolf, jackal, otter) were to be completed by the end of 2020, and recently (but no earlier than in late April 2021) appeared online.6

3EPR of **Romania** reported that no national red lists had been adopted (partly due to the absence of the legal basis), though several red lists had been drafted by scientists and were used for research purposes (e.g., the 2012 Checklist and Red List of Bryophytes of Romania, using the IUCN methodology, which identified 374 threatened bryophyte species). As a result, Chapter 11 elaborated on the threatened species subject on the basis of the 2019 global IUCN assessment (table 11.4), according to which 2 plant and 18 animal species (2 bird, 1 mammal, 8 fish, 5 insect and 2 mollusc species) occurring in the country were CR at the global level (which did not necessarily reflect their conservation status in Romania, where many more species could be threatened at e.g., the national level). Furthermore 1 fungi, 8 plant, and 30 animal species were categorized as EN; and 7 fungi, 6 plant, and 76 animal species were categorized as VU. Chapter 11 also noted the 87 plant and 83 animal species listed in Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (table 11.5), as well as Romania’s reports to the EU concerning species of Community interest, namely the 2013 report related to the Habitats Directive, describing the conservation status of plant and animal species for the period 2008–2012 (table 11.1), and the 2020 report related to the Birds Directive. A possible inconsistency appears in the number of species assessed, as Chapter 11 stated “As a result, 608 reports were drawn up for 251 species”, while table 11.1. below indicated that the conservation status had been evaluated for as many as 573 species (93 plant, 141 invertebrate, 94 fish, 54 amphibian, 55 reptile, and 136 mammal species).

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According to the 2018 VNR of Romania, the conservation status of plants has been assessed at the national level in 1994 (the Red List of Higher Plants of Romania, elaborated by the Romanian Academy), which indicated that out of some 3,700 species of higher plants occurring in the country, 39 species were endangered, 171 vulnerable, and 1,256 were rare, and that 23 species had been assigned the 'natural monument' status.

Chapter 11 of the 3EPR of Romania noted the adoption of a number of single species conservation national action plans, concerning the brown bear, grey wolf, ferruginous duck, pygmy cormorant, Dalmatian pelican, lesser spotted eagle, among others, as well as regional action plans concerning 7 bat species and sturgeon (however, the assessments of the effective implementation of the above action plans were perhaps unavailable). It should be noted that some taxonomic terms used in 3EPR of Romania were incorrect, e.g., the pygmy cormorant was referred to as “the Small Cormorant” and the lesser spotted eagle as “the Small Eagle” (which shall be avoided).

The 2018 VNR by Romania noted single species restoration programmes (concerning the sturgeon, European bison) implemented in the country, solely attributed to the WWF, while the involvement of state institutions, agencies or entities (e.g., PAs) in the above initiatives has not been explained. The VNR also noted the development of a strategy for large carnivore protection in Europe by the WWF with Romanian participation.

As for Serbia, only the general information on threatened plant and butterfly species was available for the 3EPR. In 1999 Serbia adopted its first Red List, containing 171 plant taxa (species and sub-species), among which 4 locally endemic taxa were categorized as already extinct, 46 as preserved solely ex-situ (e.g., in botanic gardens) and a further 121 highly endangered by extinction. Serbia’s 3EPR introductory chapter mentioned the “second” Red Book published in 2003, concerning 57 butterfly species (despite that the 2003 publication concerns other species group than listed in the 1999 Red Book of flora and was probably not preceded by the adoption of the corresponding red list). As red lists for other groups of animals were not yet in place, the 3EPR provided Table I.1 “Threatened species according to IUCN and SRB IUCN status”, comparing the total numbers of mammal, bird, reptile, amphibian, and insect species occurring in the country, as well as the numbers of threatened species in each group as assessed at the global level by IUCN and at the national or regional level by the “IUCN Serbia” (most probably IUCN ECARO, Regional Office for Eastern Europe and Central Asia based in Belgrade, sharing a building with the Institute for Nature Conservation of Serbia), where in several species groups the threat of their extinction evaluated locally was considerably higher than at the global scale.

Chapter 5 of the 3EPR of Serbia on the implementation of international environmental agreements noted the ‘Rulebook on the proclamation and protection of strictly protected and protected wild species of plants, animals and fungi’, containing lists of these species. According to the introductory chapter of Serbia’s 3EPR, these lists included 1,760 strictly protected and 853 protected wild plant, animal and fungi species. Chapter 1 on the legal and policymaking framework and its practical implementation noted that the draft law on amendments (including issues relevant to the protection of wild species) to the 2009 Law on Nature Protection was under preparation. Chapter 3 on economic instruments, environmental expenditure and investments for greening the economy mentioned that fees for hunting of protected wildlife species fed the state-run Development Fund, providing loans to support the SME sector and business start-ups (which means that some protected animal species were hunted, though possibly not the strictly protected ones). More information on threatened species and measures for their conservation was not provided, as the 3EPR did not include a separate chapter on biodiversity and PAs.

In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR of 2019 which noted that 2,628 species were protected (incl. 1,760 strictly protected). 50 per cent of species protected in the country were listed by, among others, the 1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats, the 1979 CMS, or in Annexes to the Habitats and Birds Directives. As for
flora, the threat category according to IUCN methodology was assessed and determined for 1,627 taxa included in the Preliminary Red List of the flora of Serbia (2016).

Additionally, Serbia’s 6CBD NR noted the development of single species population management action plans (concerning the brown bear, wolf, and lynx) which was first elaborated in 2007 but not adopted, and later replaced by new management programs prepared for the bear and lynx in 2018 and in 2019 for the wolf. The 6CBD NR also stated that “There are unharmonized data on the number of populations of large carnivores in Serbia. According to the data of the Forest Administration, the number of wolf population varies from 1600 to 2000. Bear population at 50-120 with a marked increase in number. The population of lynx on 20-21, and the population of beavers at 40-80 with a downward trend” (although the beaver is not a large carnivore species). According to expert estimates, the total number of the 2 wolf sub-populations (Dinara-Balkan, and Carpathian) was much smaller, between 800 and 1,200 individuals (both sub-populations had either a stable or slightly upward trend).

Serbia’s 6CBD NR further noted a considerable decrease (by 69 per cent) of the population of the saker falcon (*Falco cherrug*) since 2000. The number of 50–60 nesting pairs (hence, 100–120 adult individuals) counted in 2006 and 2007 decreased to 16–21 nesting pairs (32–42 adult individuals) according to last published estimates (however, 2019 studies indicated the presence of 30–35 pairs) and stated that “Breeding and non-breeding population is estimated as critically endangered (CE) in Serbia according to the Red Book of Birds of Serbia, while the global status of the species according to the IUCN Red List is EN – endangered”. This indicates that the conservation status of this species in Serbia is less favourable than globally or assessed at the European scale, as according to the IUCN Red List edition 2020-3 the status of this species in Europe is only VU. The 6CBD NR stated that the saker falcon, listed in Annex I of the EU Birds Directive and Annex II (strictly protected species) of the Bern Convention is a strictly protected species in Serbia according to the Rulebook on the designation and protection of strictly protected and protected wild species of plants, animals and fungi (OG Serbia No. 5/2010, 47/2011, 32/2016 and 98/2016).


The 3EPR of Tajikistan emphasized the general unavailability of reliable information but provided population numbers (accordingly to the official statistics as of 2012) of 9 selected species, including globally threatened snow leopard and other species (Bukhara urial, Bukharan markhor, Bukhara deer, goitered gazelle, Marco Polo sheep) reported to be decreasing, mostly due to overhunting, heavy poaching and habitat loss. Tajikistan published the second edition of the Red Book in 2015 (following IUCN Red List categories and criteria), containing more species than the previous 1998 edition (e.g., 222 vs. 162 animal species) due to methodological corrections, not necessarily the growth in the number of threatened species. However, as a result of contradictory regulations (see section 1.6.1. on the legal framework), some animal species included in the Red Book and categorized as “threatened by extinction” were classified as game animals and officially hunted (despite several laws explicitly prohibiting such activities). The only species conservation action plan in place was on the conservation and restoration of the Bukhara deer, internationally adopted in the frame of the CMS MoU.

Since Tajikistan neither provided the ECE team the results of its self-assessment (possibly carried out in 2020) on the implementation of the 3EPR recommendations, nor indicated any other available sources, in

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7 [www.zzps.rs/wp/crvene-knjige/?lang=en&script=lat](http://www.zzps.rs/wp/crvene-knjige/?lang=en&script=lat)
order to update the above information on threatened species its 6CBD NR\(^8\) (submitted in August 2019) has been thoroughly examined.

Tajikistan's 6CBD NR noted that “An action plan for individual ecosystems and priority plant and animal species of protected areas has been developed”, though did not name the ecosystems and priority species concerned, nor indicated the current status of the above action plan (whether already submitted or adopted) and the period intended for its implementation.

Furthermore, 6CBD NR mentioned fauna indicator species inventories carried out “in the territories of the Dashtidzhumsky Reserve, on the territories controlled by individual hunting firms such as Public Organization “Bars” and on the territory of Tajik National Park”. This indicated that “In last 2 years, the number of Marco Polo sheep has increased by 1,500 individual species. The number of horned goats increased on the territory of Dashtidzhum reserve by 2,500 individual animals”. 6CBD NR noted that “It is also planned to conduct an inventory of the number of some species of leopard in all habitats across Tajikistan. Based on preliminary data, the number of snow leopards, taking into account the number of migrating species, is set in the range of 300–330 individual animals, which testifies to the effectiveness of this measures undertaken”.

Furthermore, 6CBD NR reported on the monitoring of populations being prey to snow leopards “Since 2016, the number of large ungulate hunting species in snow leopard ecosystems has been regularly recorded. In particular, in 2016 the project experts, representatives of scientific bodies of CITES and the Academy of Sciences of the Republic of Tatarstan, as well as the CEP PRT installed 27 thousand heads of argali (Marco Polo sheep). This is significantly higher than in the past years than in the snow leopard area. A cluster survey of the number of other more common hunting species of snow leopard was conducted in Central Tajikistan and the upper reaches of Zeravshan, where the density of the snow leopard population in the border areas with Kyrgyzstan is observed. In this area, according to the commission’s order, the CEP PRT Chairmen established about 70-90 thousand Siberian ibex heads with the participation of CITES scientific bodies and the project team”.

Moreover, Tajikistan’s 6CBD NR included a table informing on the population dynamics of several wild fauna species in 2016 and 2017, according to which populations of several species increased, namely the: snow leopard (from 112 to 188 individuals respectively), brown bear (735 vs. 838), Bukhara deer (368 vs. 464), Siberian ibex (5,500 vs. 5,963), “horned goat” (Bukharan markhor, 769 vs. 850), “arkhar” (argali, 6,919 vs. 6,975) and the Indian crested porcupine (1,824 vs. 2,131),\(^9\) while the number of individuals of the fallow deer (non-native, introduced, but considered rare in Tajikistan) slightly decreased (225 vs. 219), as was the same for the lynx (97 vs. 94).

Uzbekistan harboured 16 plant and 46 fauna species categorized by the IUCN as globally threatened by extinction. According to 3EPR Chapter 11 on biodiversity and PAs, these 46 animal species include 19 bird, 10 mammal, 7 reptile, 7 fish, 1 mollusc and 2 other invertebrate species, while Chapter 6 on the implementation of international agreements and commitments communicated as many as 43 bird species red-listed by IUCN. In 2009 Uzbekistan published the fourth edition of its Red Book (though still following the national categorization system, unlike the system used by IUCN) and, in 2016–2017, prepared an updated list of species for inclusion into the planned fifth red book edition (expected to use the new categorization system, as in the Red Book of the Russian Federation). The 2009 Red Book included 321 flora (where the increase in the number of species resulted not only from the worsening conservation status, but also from the identification of new, not previously assessed species) and 189 fauna species and subspecies (the planned fifth edition was expected to include already 206 animal species).

Chapter 11 noted declining trends in populations of several threatened species, as well as on the operation of special breeding centres and nurseries for the restoration of e.g., the Przewalski’s horse, Bukhara deer,

\(^8\) https://chm.cbd.int/database/record?documentID=247273
\(^9\) www.iucnredlist.org/species/10751/115099509
goitered gazelle, Asiatic wild ass, Bukhara urial, Bukharan markhor and the Asian houbara bustard. The protective status of red-listed species has been granted in the national legislation. Species conservation action plans included those developed and implemented under the CMS (for e.g., the saiga antelope, Bukhara deer, Asiatic wild ass, Severtsov argali sheep, goitered gazelle and snow leopard), and national ones (concerning the snow leopard and white-headed duck). However, information on their effectiveness was missing.

As a result of the self-assessment of the implementation of the 3EPR recommendations carried out in 2020, Uzbekistan stated that a new version of the Red Book was published in late 2019 (already after the 3EPR information cut-off date, but in accordance with 3EPR Recommendation 11.1). Red Book Vol. 1 included 314 plant species and Vol. 2 included 206 animal species. Vol. 1 includes 15 rare and endemic plant species not previously red-listed (including several new species for science that have been discovered in the last few years). 157 plant species have changed status compared with the previous edition. As for animals, the 2019 Red List includes 30 species of mammals (32 with subspecies), 52 species of birds, 21 species of reptiles, 17 species of fish (18 with subspecies), 3 species of annelids, 14 species of molluscs and 66 species of arthropods (hence, more mammal, bird, reptile, and annelid species than in the previous 2009 edition of the Red List).

Conclusions:

Based on the above summarized outcomes of the 3EPRs of 15 countries, concerning the conservation of threatened species and comparisons between countries, only few countries seem to be well advanced or progressing towards effective species protection, namely Belarus, Bulgaria, Kazakhstan, Mongolia, and Romania (possibly also Uzbekistan), provided the adopted species conservation action plans are effectively implemented.

Simultaneously, on the basis of the above summary information, the weaknesses in performance of several other reviewed countries can be identified.

The proper and accurate assessment of trends in populations of threatened species (which was the main task of this particular EPR sub-section) was not possible in numerous cases, in particular not for Bosnia and Herzegovina, Georgia, Morocco, and North Macedonia (also not for Montenegro and Serbia, their 3EPRs did not include a separate chapter on biodiversity). Most often the reason was the unavailability of credible data as a result of, among others, the lack or discontinuation of regular countrywide field research, nature inventories, and wildlife censuses; and/or the absence of operational national biodiversity monitoring and information systems. As a result, the state of knowledge (or the lack thereof) on the conservation status of threatened species hampered or seriously prevented sound information-based conservation policy and decision-making.

In the 3EPR cycles, as many as 5 countries still had no national red lists and resulting red books: Bosnia and Herzegovina (where the red lists adopted by its two entities were not yet harmonized), Montenegro, Morocco, North Macedonia (which developed its national red list in 2019–2020) and Romania. Hence, species conservation activities, even if affordable, could not properly be prioritized (except for Bulgaria and Romania as EU Member States, which have to ensure the conservation of species of Community interest). The methodology used in Uzbekistan for the preparation of its red lists (and red books) not following the globally adopted IUCN standards, makes them non-compatible at the international level.

No information on legal protection was provided in the 3EPRs of Bosnia and Herzegovina and Romania (in the latter, the EU Directives apply). The majority of the 3EPR countries adopted relevant legal acts; however, several reviewed countries had obvious problems with the proper positioning of the conservation of threatened species within their national legislation. For example, Georgia and Tajikistan allowed commercial hunting in species included in their Red Lists. At the time of the 3EPR in Kazakhstan, a separate legal act concerning the protection of plant species and communities was missing, while in North Macedonia the relevant law granting legal protection to species was neither precise nor effective.
Several 3EPRs did not provide any information on undertaking conservation measures for the protection of threatened species, for example in the frame of national species conservation action plans or programmes (most probably missing in Bosnia and Herzegovina, Montenegro, and Tajikistan). In the other countries, even if such action plans were implemented, no information on the results of such activities was provided (most probably such evaluations were either never conducted, or the results of such were not made accessible for the EPR purposes).

Resulting recommendations for the fourth EPR cycle:

It should be emphasized that the adoption of a legal act on species protection, national strategy, or single species conservation action plans or programmes are often an indispensable first formal step towards halting the loss of species diversity. Nonetheless, this is only a declaration of commitment to respond to the above challenge (‘declarative country response’) which cannot be effective alone if not followed by law enforcement and implementation of adopted strategies, action plans and programmes (‘active country response’). Indeed, even a perfect law or strategy will not save a single specimen of threatened species unless enforced or implemented ‘on the ground/in the field’. Hence, whenever possible, each EPR should try to assess not only the presence of the ‘declarative country response’, but also the progress of tangible measures applied by countries in order to improve the conservation status of species concerned, thus the effectiveness of the ‘active country response’.

It is therefore recommended that the fourth EPR cycle, EPRs examine not only the issue of the development and formal adoption of, among others, strategies on species conservation and protection, but also evaluate the progress and effects of actual implementation of, for example, single species action plans for the preservation of threatened species, in particular those red-listed in a particular country.

Another important issue is the effective enforcement of the legal protection of species also outside the territories of PAs (such a question can possibly be included in the questionnaires preparing the EPR mission).

Following the methodological remarks, each EPR shall try to investigate whether the reviewed country:

- Harbours rare and threatened species (including those red-listed by the IUCN);
- Identified its rare and threatened species (by adopting national red lists, and publishing resulting red books);
- Regularly monitors trends in populations, and threats to the survival of these species;
- Has granted legal protection to these species;
- Effectively enforces their legal protection within its territory (both inside and outside PAs);
- Identified the most urgent priorities, adopted and implemented species conservation action plans.

Endemic species

Methodological remarks

Endemic species (which natural ecological range of occurrence is spatially limited to a single region, country, area or site) usually receive much less attention than the globally or regionally threatened species, inscribed to the global or regional IUCN Red Lists. The conservation status of the vast majority of locally endemic species has never been assessed by the IUCN, as their occurrence is often known only to scientists coming from a single country, therefore these ‘local’ species or sub-species ‘do not count internationally’ (but are often indicated in national Red Books).

However, endemic species are equally important for the preservation of biological diversity, and usually even more threatened than the globally red-listed ones (some of which are still abundant in several regions where habitat loss and fragmentation are less likely to occur than in the remaining parts of their biogeographical range). Finally, currently ongoing climatic changes can have much stronger adverse
effects on the last survived habitats and refuges of the paleoendemic species (formerly having larger ecological ranges of occurrence, nowadays limited to smaller areas, just few sites being the last stands worldwide in case of steno-endemic species) or endemics requiring specific environmental conditions (for example, glacial relict species, which survived until today in some high-mountain refugia).

Due to the above, EPRs should duly consider endemic species and monitor the ‘active country response’ – actions aimed at the preservation of endemic species and the effectiveness thereof.

Coverage of endemic species subject in 3EPR reports

Separate sub-sections on endemic species were present in 8 out of 15 3EPRs (Albania, Belarus, Georgia, Kazakhstan, North Macedonia, the Republic of Moldova, Romania and Uzbekistan). However, the remaining 7 reviewed reports (incl. Montenegro and Serbia, where these 3EPRs did not contain a chapter on biodiversity and PAs) also mention endemic species.

Trends in endemic species and 3EPR country performance (on the basis of the 3EPRs and VNRs)

The 3EPR of Albania noted the occurrence of 32 endemic and 110 subendemic plant species in the country. Additionally, Chapter 11 on energy, industry and environment reported on the Antea Cement plant efforts to rehabilitate an operating limestone quarry by “planting endemic trees and shrubs”, without mentioning any particular species. No information on the endemic animal species was provided (although the IUCN Red List does inform on such). The 3EPR reports that Albania updated its national Red List of Fauna and Flora in 2013 and adopted species conservation action plans targeted at several red-listed species (which could possibly include endemic ones). However, most probably, no further details on the actual implementation of these action plans were available for the 3EPR.

The 3EPR of Belarus openly stated that no programme had been developed or implemented to protect any of the four endemic plant species and that the country had no endemic animal species.

As for Bosnia and Herzegovina, 3EPR Chapter 11 emphasized that the country is part of the “third most important biodiversity hotspot in the world with respect to the number of endemic plant species”, and noted that “as much as 3 per cent of the total endemic flora of the Balkans (1,800 species) is contained within the flora” of the country (which would then result in as many as 54 endemic flora species) but did not further elaborate on this subject. Again, no information on the endemic animal species present in the country (red-listed by IUCN), or actions aimed at the preservation of endemic species was provided.

The 3EPR of Bulgaria stated the occurrence of a large number of relict and endemic species, including 270 regionally (Balkan) and 174 locally endemic vascular plan species, as well as 410 regionally and 790 locally endemic animal species. Although the report mentioned the adoption of action plans for the conservation of 7 plant and 4 animal species within the reporting period, it did not inform whether the above relate to any of the endemic species.

According to 3EPR of Georgia, 21 per cent of flora (around 900 species) were endemic, including 600 species endemic to the Caucasus (thus regionally endemic) including most oak species growing in the country, and 300 species endemic to Georgia (thus locally endemic). Furthermore, 3EPR reports noted the compiling (most probably in regional cooperation with the neighbouring countries) of the first ever list of plants endemic to the Caucasus region (about 2,950 species/subspecies) which resulted in the publication of the Caucasus Red List of Plants in 2014. The fauna included 1 locally endemic reptile species, 1 amphibian relict species endemic to southwestern Caucasus (the Caspian salamander, mistakenly indicated among mammals), 3 Caucasian endemic bird species and 19 mammal species. However, a discrepancy concerning the number of endemic reptile (1 vs. 15) and amphibian (1 vs. 3) species has to be noted, as the Introduction to 3EPR stated that “The fauna includes 16,054 species, of which 19 mammal, 15 reptile, 3 bird and 3 amphibian were endemic to the Caucasian region and 1 species, the Adjarian lizard (Darevskia mixta), is endemic to Georgia”. Some endemic species were later mentioned
in Chapter 6 in detailed descriptions of particular ecosystems, also in the context of habitat loss of the glacial relict species inhabiting the nival zone, due to the retreat of glaciers. Endemic species were also mentioned in Chapter 11 on forestry and environment, and Chapter 12 on tourism and environment. Chapter 6 mentioned national conservation plans elaborated for numerous species (some of them implemented) but did not inform whether the above related to any endemic species.

In its 2020 VNR Georgia mentioned the high share of endemic species, and the role of PAs in their preservation and protection.

The 3EPR of Kazakhstan noted that 14 per cent of vascular plants were regionally endemic (including numerous relict species), and that mountain regions were the centres of flora endemism. As for fauna, the 3EPR referred to the global IUCN Red List, which indicated 6 locally endemic mammal species, while many other fauna species were considered regionally endemic. However, no data were available to assess trends in their populations, and no information on endemic species conservation plans was available.

In its 2019 VNR Kazakhstan noted that "Forest areas providing habitat for relict and endemic species have been granted the special status of valuable forest land and reserve (PAs), thus all forms of forest use are prohibited in these areas".

The 3EPR of the Republic of Moldova stated that only few species were locally endemic, provided one species name (however the mentioned plant occurs also in Ukraine and Bulgaria), and referred to the general unavailability of data.

According to the EPR of Mongolia, its flora includes more than 120 endemic and 490 subendemic species. Among fauna species, the Mongolian saiga antelope is locally endemic, while regional endemics include the wild Bactrian camel, Mongolian gazelle and 3 reptile species. Trends in populations of the globally CR Mongolian saiga and the wild Bactrian camel, as well as of the Mongolian gazelle have been duly analysed. National programmes and action plans on the protection of rare and endangered animal (including the endemic saiga antelope) and plant species were adopted, their full implementation is stipulated by Goal 4 of the 2015 National Biodiversity Programme for the period 2015–2025.

In case of Montenegro, its 3EPR mentioned only that the cumulative effect of the 6 major categories of threats to biodiversity identified in its 4CBD NR could result in the loss of species, including endemic ones.

The EPR of Morocco reported on the substantial number of endemic species of animals (including 21 endemic reptile and some fish species) and plants (the latter estimated at some 930).

In its 2020 VNR Morocco mentioned PAs in mountain regions as the centres of endemism.

The number of endemic species occurring in North Macedonia differs, depending on the 3EPR Chapter, and source of information. Chapter 7 on climate change noted 854 endemic species in the country, while Chapter 11 on biodiversity and PAs reports on the inconsistency of information coming from different sources: the 2013 SoER reported on 976 endemic species (including 870 considered local endemics), according to the 5CBD NR the country harboured 150 endemic algae, 120 endemic vascular plants, more than 700 endemic invertebrates and 27 endemic fish species, while the State Statistical Office in 2017 noted more than 950 endemic species, including 196 algae, 109 dicotyledon, 5 monocotyledon, 2 moss, 1 fern, 27 fish and 3 mammal species. Chapter 11 also indicated the centres of endemism in the country (Lake Ohrid with 212 endemic species, including 158 taxa of higher plants, and high mountain regions, e.g., Sar Planina with some 150 endemic flora species). The global IUCN Red List noted 13 locally endemic bird species, while many other species were regional south-eastern European endemics, such as the Macedonian pine, Balkan lynx and Balkan chamois (the last is hunted in North Macedonia despite its rarity, moreover in still increasing numbers). Several species conservation action plans have either been adopted (including the regionally endemic Prespa trout) or drafted (including the Balkan lynx).
In its 2020 VNR North Macedonia noted the number of its endemic species (exactly the same as provided in the above 2013 SoER and 5CBD NR) and that "Lake Ohrid is one of the main centres for endemic species in the country, along with Galičica, Jakupica-Karadžica, Korab and Pelister, and the Shara Mountains".

Chapter 11 of the 3EPR of Romania quoted the 2013 NBSAP for 2014–2020, according to which over 1,000 fauna species occurring in the country were considered endemic; however, the information on their distribution and current status was insufficient. Chapter 11 listed 8 endemic fish, many insect and invertebrate endemic species, and noted that over 4 per cent of plants were endemic (57 endemic and 171 sub-endemic taxa) and listed 18 species.

Surprisingly, the 3EPR Chapter 11 did not quote the 2018 VNR by Romania, which mentioned several other locally endemic subspecies of vertebrate fauna (mammals and birds), e.g., of the red deer (Cervus elaphus montanus, L.), wild boar (Sus scrofa attilla, L.), European hare (Lepus europaeus transsilvanicus, Pallas), chamois (Rupicapra rupicapra carpatica, Blainville), willow tit (Parus montanus transylvanicus, Conrad), and also indicated the other main centres of endemic fauna occurrence (mountain massifs of Rădu-Giumalău, Haghisasul-Mare, Fagaras, Paring, Cernei, Semenic, Almaj, and Bihor) other than just the Danube Delta and Black Sea coastal areas, indicated in 3EPR Chapter 11.

Chapter 6 on climate change mitigation and adaption in the 3EPR of Serbia mentioned that endemic or steno-endemic mountain-top species are most vulnerable to climate change as they live in isolated habitats with low population sizes. The above is confirmed by 6CBD NR, which indicated that endemic and relic species are particularly widespread in mountain and highland areas, in cliffs and canyons.

The 3EPR of Tajikistan mentioned two endemic species of sturgeon occurring in Syr Darya River but referred to the general unavailability of data.

In the case of Uzbekistan, its flora included 350 locally endemic species (approximately 8 per cent of the total) of which some 10–12 per cent were considered to be relict endemics, preserved mainly in the mountainous regions of Pamir-Alay. In 2017 the first lists of endemic species identified in each botanical-geographical region (eight regions divided into 23 units in the mountainous areas and a further eight regions divided into 15 units in the lowland part of the country) were published. Only 131 of the above 350 locally endemic species were present inside the most effective PA categories. As for fauna, the global IUCN Red List noted three endemic fish (sturgeon) species, while according to the 6CBD NR a further 53 to 54 regionally endemic animal (30 reptile, 8 bird, and 16 mammal) species and subspecies occurred in Uzbekistan. The highest level of endemism was among fish (50 per cent) and reptiles (49.2 per cent), much lower among mammals (14.95 per cent) and birds (1.7 per cent). 6CBD NR noted decreasing trends in populations of locally endemic fauna species. Some species conservation plans have been adopted and implemented, but mostly as part of international initiatives (e.g., the CMS Convention and its Central Asian Mammals Initiative (CAMI)), which therefore concern regionally rather than locally endemic species.

Conclusions:

Trends in endemic species diversity (subject of this particular EPR sub-section) have at least partly been assessed only in the EPR of Mongolia, while relevant data were unavailable for the remaining 14 countries.

The 3EPRs noted the endemic species occurrence, though much less on activities implemented towards their preservation.

It is symptomatic that the majority of the 3EPR countries (except for Georgia, Kazakhstan, Morocco, North Macedonia, and Romania) did not even mention endemic species in their VNRs.

Mongolia and North Macedonia were the only reviewed countries that adopted conservation action plans targeted at endemic species. Possibly some other reviewed countries (e.g., Albania, Bulgaria, Georgia,
and Uzbekistan) also progressed in this respect, but the information on such achievements was not made available for the 3EPR purposes.

**Resulting recommendation for the fourth EPR cycle**

It is therefore recommended that the fourth cycle examine the issue of the development, adoption, and effective implementation of single species action plans for the preservation of regionally or locally endemic species.

**Widespread species**

**Methodological remarks**

Even in developed countries the exact data on the current numbers of wildlife populations is never available, not even for all rare and globally threatened species, much less the widespread and game species. Such numbers can only roughly be estimated, even if data are collected in the course of nationwide wildlife censuses carried out in the field at the same time throughout the whole country (which is rare). Most often mathematical models (more or less accurate) based on a set of different indicators are applied for calculations. Hence, the accuracy of statistical estimates is always questionable, as different groups of interest try to influence the methodology used, and its results (also due to the fact that the resulting estimates become the basis for setting the annual quotas for hunting in game species).

Although widespread species occurring in large numbers enjoy much less attention than the rare and globally threatened ones, their presence and wellbeing has a much stronger effect on the ecosystems. The increasing density of specimens of herbivorous species can mean increased competition for forage with domestic livestock, and damages in silviculture, in particular in areas subject to land restoration, reforestation and afforestation measures (as animals browse on regenerating vegetation, including young seedlings). Except for hunting and poaching, only the presence of widespread carnivorous species can help to control the above situation. However, in some 3EPR countries for example, the grey wolf is considered as an ‘outlaw’ that can freely be hunted without any limits or permits, despite its regulatory functions in the ecosystem, important for the health status of other wildlife populations, and favourable for the natural regeneration of the forest.

Trends in populations of widespread animals (e.g., wild ungulates) affect not only the state of natural habitats of these species but also the populations of numerous protected and globally threatened carnivorous species. Decline in populations of wild animals being prey to the snow leopard, for example, automatically means the decline in its nutrition base, leading to their decrease in numbers and turning to feeding on livestock, which aggravates human-wildlife conflicts and often results in retributive killing of predatory species by herders.

It should also be noted that only the estimated numbers of widespread animal species can be expected, as statistics on the size of populations of widespread flora or fungi species usually do not exist, such populations are most often described by delineating their natural ecological range of occurrence within the reviewed country.

Information on widespread species was available only in some 3EPRs, for clear reasons absent in the VNRs and additional information provided in 2020 by countries (also not in the indicated 6CBD NRs).

**Coverage of widespread species subject in 3EPR reports**

Information on widespread species only appears in 5 out of 15 reviewed 3EPR reports (of Belarus, Kazakhstan, Mongolia, Tajikistan, and Uzbekistan). The absence of similar information can easily be explained in the case of Montenegro and Serbia, their 3EPRs had no chapter on biodiversity and PAs.
The lack of credible data could have been the reason for the evident absence of the section on widespread species in the remaining eight 3EPRs of:

- **Albania** (Chapter 9 on biodiversity, forestry and PAs mentioned only the occurrence of the grey wolf, and of many bird species)
- **Bosnia and Herzegovina** (Chapter 11 on biodiversity and PAs noted the abundance of species, while Chapter 1 on legal, policy and institutional framework noted the difference in the number of game bird species between the two entities: 119 in FBiH, versus 153 in RS)
- **Bulgaria** (Chapter 9 on biodiversity and national ecological network mentioned e.g., birds of prey)
- **Georgia** (Chapter 6 on biodiversity and PAs, and Chapter 11 on forestry and environment both mention widespread forest-forming tree species)
- the **Republic of Moldova** (Chapter 9 on biodiversity and PAs mentioned general negative trends for bird populations as result of decline in wetland habitats, and the extension of the ecological range of southern avifauna species northwards)
- **Morocco** (Chapter 9 on biodiversity and PAs emphasized that key threats identified in 3EPR can also affect the populations of widespread species)
- **North Macedonia** (where, according to Chapter 11 on biodiversity and PAs, the official statistics do provide data on widespread species, though not on their living populations but on the number of their specimens effectively hunted, which makes the assessment of trends in populations as well as the verification of the appropriateness of setting the annual hunting quotas not possible)
- **Romania** (Chapter 11 on biodiversity and PAs stated that no data were available).

**Trends in widespread species and 3EPR country performance (on the basis of the 3EPRs)**

The 3EPR of **Belarus** provided comprehensive information on widespread species, e.g., the forest-forming tree species, 200 species of edible mushrooms (incl. some 20 harvested), and 50 game species (incl. 21 mammal, and 29 bird species) and 31 fish species of commercial importance. Statistics on the population numbers of the main 13 game species between 2010 and 2014 were provided, and the change is calculated, demonstrating trends in their populations. These statistics can also be compared with data on the hunted specimens of these species (within the same period). For example, despite the 56.2 per cent increase in the number of hunted Eurasian elks, the population of this species still increased by 32 per cent (which means that the hunting quota was determined at a sustainable level). On the other hand, the populations of grouse and capercaillie continued to decline, regardless of the decrease in hunting. Moreover, the increase of hunting, which led to the decline of fox and wild boar populations, was justified by the need to combat rabies or the contagious African swine fever disease, respectively.

As for **Kazakhstan**, data gathered for its 3EPR also confirm that in 2008–2016 populations of many game species (e.g., of the Siberian ibex, Eurasian elk, red deer, Siberian roe deer, wild boar, short-tailed weasel, Eurasian beaver, brown bear, and Turkestan lynx) considerably increased in numbers over this short period, which prove that the annual hunting quotas were kept at a reasonable level, allowing not only for the regeneration of wildlife populations, but also for their continuous increase in numbers (regardless of poaching on several species). Similarly, the discontinuation of hunting on the NT Altai weasel allowed for the increase of its population. However, the 3EPR identified that the census of wild animals is not regularly carried out in all licensed hunting grounds (e.g., in 2016 only on 32.4 per cent of their total area), which affects the credibility of data, later serving as a basis for setting the annual quota for the next year; that since 2014 no data on game fowl species’ populations was available in the official statistics.

The 3EPR of **Mongolia** provided the estimates on fluctuating trends in populations of three widespread wildlife species: the red deer, the Mongolian gazelle, and the Eurasian elk, the first two seriously affected by poaching, severe winter climatic conditions, and periodic outbreaks of the highly contagious livestock-transmittable foot-and-mouth disease. As for widespread avifauna, according to 2011 research, 64.9 per cent of 476 bird species had stable population trends, 4 per cent declining and only 0.1 per cent increasing. Again, its EPR acknowledged that the trend for the remaining 31 per cent of bird species populations had not been determined, and that the most recent nationwide wildlife census was carried out in 2010 (and has
not been repeated since then, hence the data used for the 2018 3EPR could have no longer been accurate).

The 3EPR of Tajikistan also emphasized the lack of credible data on the actual size of wild species populations but provided the available data on the size of populations of the NT Marco Polo sheep and Bukharan markhor (decreasing trends, due to habitat loss, illegal trophy hunting and poaching), as well as the Siberian ibex, brown bear, and wolf (indefinite population trends).

Although Tajikistan did neither provide the results of its self-assessment of the implementation of the 3EPR recommendations (possibly carried out in 2020), nor indicated any other available sources, in order to update the above information on widespread species, its 6CBD NR\(^{10}\) (submitted in August 2019) has thoroughly been examined.

Tajikistan’s 6CBD NR included a table displaying the population dynamics of several wild fauna species in 2016 and 2017, according to which several fauna populations increased, e.g., of the wolf (from 2,426 to 2,568 individuals respectively), wild boar (9,500 vs. 10,500), fox (5,500 vs. 5,699), while some other populations slightly decreased, e.g., of Eurasian badger (2,945 vs. 1,819), beech marten (1,350 vs. 1,232), marmot (probably *Marmota himalayana*,\(^{11}\) 12,950 vs. 12,500), Eurasian otter (485 vs. 462) and common pheasant (1,154 vs. 1,100).

In Uzbekistan, the statistical data on the populations of widespread wild animals (including game species) is collected on a regular basis but is not made publicly available in official statistics. According to its 3EPR, populations of several game mammal species (wild boar, Eurasian badger, and Tolai hare) were increasing in numbers (despite poaching), which was often followed by raising their annual hunting quota, and its effective use. No data were available on the status of, and trends for, other widespread mammal species, e.g., the grey wolf or red fox. As for the game bird species, despite the 20 per cent decrease in population of the chukar partridge, the use of its annual hunting quota more than doubled within the reporting period, a similar disproportion was observed also for the common pheasant, whose population demonstrated fluctuating trends, but the annual quota and its use increased.

**Conclusions:**

Trends in widespread species have comprehensively been described in the 3EPRs of Belarus and Kazakhstan, and partly also for Uzbekistan, while the limited availability of statistical data made it much less possible in the remaining 11 cases.

According to the 3EPRs, both Belarus and Kazakhstan were successful in maintaining the viable populations of widespread species and adjusting the annual hunting quota to the reported population numbers in a way that allows not only for the regeneration of wildlife populations, but also for their continuous increase in number.

However, as hunting is performed in all reviewed countries, the immediate question is: how are the annual hunting quotas set in countries which have little information on their populations of widespread game animals?

The absence of national biodiversity monitoring systems, and discontinuation of nationwide wildlife censuses automatically result in obstacles for the development of sound information-based policy and decision-making.

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10 https://chm.cbd.int/database/record?documentID=247273
11 www.iucnredlist.org/species/12826/115106426
Resulting recommendation for the fourth EPR cycle:

It is recommended that the fourth cycle EPRs duly consider the issue of determining information-based annual hunting quotas, which can also be facilitated by the review of the next CBD NRs submitted by countries which committed in their current NBSAPs to improve the current quota determining schemes (e.g., in North Macedonia, where the development of scientific studies on the status of game species populations for the purpose of setting more appropriate hunting quotas is planned between 2019 and 2022 under NBSAP Action 7.2.4).

Alien species

Methodological remarks

This EPR section should consider only the ‘invasive alien species’ (IAS), in particular those which could pose significant threats to natural ecosystems and populations of species native to the reviewed country. Alien species are now present in most countries worldwide, which does not necessarily mean that they have adverse effects on natural ecosystems, as over the last centuries thousands of alien species have been ‘naturalized’, domesticated, and cultivated (like e.g., potato or tomato in Europe and Asia).

Secondly, not all alien species are invasive, while significant changes in natural ecosystems of some larger countries are often caused by the uncontrolled biogeographical expansion and spread of the ‘invasive native species’, indigenous for a given country but not previously occurring in particular regions and sites remaining beyond their historical natural ecological ranges. This phenomenon is further aggravated by the ongoing global climate changes which rapidly alter the environmental conditions in natural habitats (e.g., in mountain ecosystems).

It should be noted that the terms ‘native’ vs. ‘alien’, and ‘invasive’, can sometimes be misleading, ambiguous, and controversial (see e.g.: Colautti, R.; MacIsaac, H. (2004). A neutral terminology to define ‘invasive’ species).

Coverage of invasive alien species subject in 3EPR reports

The issue of IAS is referred to in the majority of assessed 3EPR reports, except for Serbia (its EPR report did not contain a chapter on biodiversity and PAs). In the case of Montenegro (same gap in EPRs coverage) its 3EPR quoted the 2010 4CBD NR, listing IAS among the six main threats to country’s biodiversity, though inadequately studied. Moreover, the 3EPRs of Bosnia and Herzegovina, Georgia, Mongolia and Tajikistan note the lack of data on IAS, resulting from the lack of research, often caused by budgetary shortages.

Trends in invasive alien species and 3EPR country performance (on the basis of the 3EPRs, VNRs and additional information provided in 2020 by countries)

Whilst the 3EPR SDG-related box of Albania states that no research on IAS has been conducted, Chapter 9 (on biodiversity, forestry and PAs) indicates that the many years of the country’s isolation (which prevented the import of IAS) and the social and economic changes ongoing since the 1990s have facilitated their spread across the country, and lists 38 new invasive flora species, 47 invasive fauna species, and 20 IAS among sea organisms (most probably identified under the project funded by the World Bank in 2007).

The 3EPR of Belarus differentiated and elaborated on both the non-native (alien) species intentionally imported and introduced (estimated for some 1,500 species of trees and shrubs, and 5,000 herbaceous plant species) and on those non-native and additionally IAS. The share of alien plant species in the composition of flora inside national parks and nature reserves was estimated for some 10 to 20 per cent.

http://planet.botany.uwc.ac.za/nisl/Invasives/Assignment1/ColauttiandMacIsaac.pdf
which clearly indicates the scale of the influence on natural ecosystems. The total number of IAS was estimated for 30 animal and over 600 plant species (some 300 of which have been identified throughout the last 50 years). Since 2007 a specialized inter-institutional research unit, ‘The Centre for Study of Invasive Species’ coordinates research related to the spread of IAS in Belarus, and the development of measures to prevent, minimize and reduce the damage caused by the spread of these species. Since 2011 the country has the operational long-term national IAS monitoring system, carried out regional IAS-related field inventories, and maintained a specialized database on the spatial distribution of the most harmful IAS (15 plant and 6 animal species) as well as IAS inventories and databases for each administrative province (as part of the State Flora Cadastre). Regional administrations approve annual plans on particular IAS control or eradication.

The 3EPR of Bosnia and Herzegovina indicated that the list of IAS had not yet been published, and that preparing strategies concerning IAS, listed among the major threats to biodiversity of the country, was planned by 2018, according to Target 10 of the 2017 NBSAP for 2015–2020 (the accomplishment of which task should possibly be verified under the fourth EPR cycle).

In the course of the self-assessment of the implementation of the 3EPR recommendations carried out in 2020, Bosnia and Herzegovina noted the development of the document “Inventory and Geographical Interpretation of Invasive Species in FBiH” in 2019 (a basis for the adoption of action plans concerning control and prevention of the spread of invasive species) and the adoption (OG FBiH, No. 102/15, 78/19) of a Rulebook on the method for conducting a risk assessment and preparation of a risk assessment study for the introduction, reintroduction and cultivation of alien species and the licensing procedure for introducing alien species into the Bosnia and Herzegovina.

Even though the 3EPR of Bulgaria sometimes uses “invasive” and “alien” adjectives interchangeably, it did differentiate these two kinds of species (e.g., by stating that among 29 alien marine invertebrates only nine species were considered invasive) and provided detailed information on identified IAS and assessment of their negative influences on ecosystems. Scientific research on IAS has intensified within the 3EPR period, several research projects have been financially supported by the state, and results have been published in a wide range of scientific publications (the 3EPR also mentioned a list of IAS, and a study on the main 60 invasive and potentially invasive alien plant species). According to the 3EPR, the new NBSAP was expected to include a dedicated chapter on IAS (which should possibly be verified under the fourth EPR cycle).

According to the 2020 VNR by Bulgaria a register of alien and non-native aquaculture species has been published in order to assess and minimize their potential impact on aquatic habitats.

3EPR of Georgia noted 26 IAS identified, 6 of which have adversely affected the Black Sea ecosystems, and that no progress has been achieved since 2010, due to the lack of finance and capacities (for research and monitoring) resulting in the lack of data on IAS.

In the voluntary self-assessment of the achievement of SDGs provided to ECE EPR team in 2020, Georgia stated that “The need for an effective control mechanism against introduction of IAS, as well as their monitoring and inventory was identified, considering the fact, that by the moment of NBSAP elaboration, no detailed studies have been conducted on the impacts of most alien species on local ecosystems and biodiversity”.

However, it should be noted that the above mentioned NBSAP concerned the 2014–2020 period, so that the above information provided in late 2020 (thus, at the very end of the 6-year NBSAP implementation period) should rather inform on the possible expected progress in IAS identification achieved in Georgia throughout the last 6 years, in the course of NBSAP implementation, than on the shortcomings existing prior to the adoption of the 2014 NBSAP.

Therefore, the accomplishment of the National Target B.2. (“By 2020, alien invasive species have been assessed with regard to their status and impact; their pathways have been evaluated and identified, and
measures are in place to prevent their introduction and establishment through the management of these pathways; no new alien species have been recorded") in Georgia (2014 NBSAP) should possibly be verified under the fourth EPR cycle.

According to the 3EPR of Kazakhstan, although provisions aimed at preventing the introduction of alien species have been incorporated into the national legislation, the data on IAS was fragmented due to the absence of a related long-term state monitoring programme, and in 2018 no special programme or measures for their control and eradication was in place. Best studied was the IAS influence on the ecosystems of the Caspian Sea and the Alakol and Balkash Lakes (where non-native fish species have deliberately been introduced for aquaculture and commercial fishery). In 2012, IAS present in Kazakhstan included 26 fish, 1 bird, 5 mammal, several invertebrate, and numerous plant species (the Institute of Botany and Phytointroduction conducted research on plants since 2015, initially funded by the GEF, later with the state budget support).

The 3EPR of the Republic of Moldova noted some 460 plant and 150 animal IAS, reported in the 4CBD NR, and further elaborated on the adverse effects of the 130 plant IAS on agriculture (damage in crops) and 15 on “trees” (which could mean damages in silviculture and/or natural ecosystems), including the estimate of damages in agriculture ("5 to 10 per cent of cereal crops, 15.2 per cent in weeding plants and 25 per cent of multicultures"). The above IAS numbers were then compared to the information from the 2012 IUCN Invasive Species Database, listing 61 invasive species (mostly plant, fish and insect species) in the Republic of Moldova and further focuses on IAS reported to have a significant impact on natural ecosystems. The 3EPR elaborated also on the expansion of 3 IAS of trees in the valleys of the Dniester and Prut Rivers, or the steppe landscape of Gagauzia, and provided some explanations on the role of the local populations both in enhancing the spread of IAS of economic values, as well as in controlling and eradicating the IAS populations (despite that the effectiveness of such practices is reported to be questionable). Moreover, the 3EPR provided scientific justification questioning the official classification of one tree species (hornbeam) as IAS, as the country lies within its ecological range, and this species is a natural forest-forming tree species.

According to 6CBD NR, indicated by the Republic of Moldova in the course of the self-assessment in 2020, the Registry and list of animal alien species including 149 species (12 mammal, 2 bird, 3 reptile, 4 fish, 6 mollusc, 1 crustacean, 11 arthropod, 67 insect, 1 trematode, 6 cestode, and 36 nematode species) was elaborated by the Institute of Zoology in 2011–2014, which revised the list of the most dangerous invasive animal species (listing 107 species). As for plant IAS, monitoring of the American maple was carried out in 1 scientific reserve and the regulation and action plan concerning Ambrosia artemisiifolia for 2019–2024 has been approved by the Government.

Similarly to Kazakhstan, according to Mongolia’s 3EPR, relevant provisions have been incorporated into the national legislation of Mongolia, but their implementation was not possible due to the lack of research on IAS and resulting data. Available sources indicated the import of alien invasive tree and saxaul species from China for tree planting and land rehabilitation of mining areas in the Gobi region.

The EPR of Morocco reported on some 30 to 39 IAS, which was compatible with data available at the Global Invasive Species Database (GISD), but also elaborated on the adverse effects of the other 2 species, not GISD-listed. However, the lack of coordination and synthesized information concerning the IAS occurrence and status was reported.

In North Macedonia the prevention of IAS introduction, control of their populations or their eradication, has been inscribed into the legislation. However, due to the absence of a related national monitoring system the data on IAS was scarce and no measures have been implemented. The 3EPR further elaborated on intentionally introduced tree IAS: on the adverse effects of IAS on the ichthyofauna of Lakes Prespa and Ohrid. The list of invasive aquatic and terrestrial plants was under preparation at the time of its 3EPR, the 2018 NBSAP for 2018–2023 included Target No. 8 “Develop and establish appropriate policy for recording, control and protection of non-native and invasive species” (the NBSAP translation into English
must have some mistakes, as IAS are usually not subject to protection), which stipulated the identification of non-native (in particular, invasive) species by 2021, to be followed by the elaboration and adoption of a national list of invasive species between 2021 and 2022 (the accomplishment of all above tasks should possibly be verified under the fourth EPR cycle).

Chapter 11 of the draft 3EPR of Romania reported that neither the national list of alien species nor any assessment on the status of such species (e.g., included in the Pan-European Inventory of Alien Species which is reported to be used as a reference) had so far been developed, as of 2020. An ongoing European funds financed project was expected to elaborate and prepare the national list of IAS for its official adoption (which therefore shall be verified under the possible fourth cycle EPR). According to the 2017 study, the occurrence of 982 alien species was noted, incl. 490 plants, 390 terrestrial animals (of which 90 per cent were invertebrates), and 102 aquatic organisms (44 freshwater and 58 marine). 59 per cent of alien plant species were ornamental, deliberately introduced, while a further 112 species and clones of alien tree species were introduced by foresters (usually with a restricted distribution). The cumulative rate of introductions showed a steady increase in the number of alien species. However, it should be noted that the above numbers referred to alien species, while the share of IAS among the above mentioned 982 alien species was indefinite.

In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR, which noted the elaboration of a preliminary list of invasive plant species (incl. 68 taxa) in 2012, for the purpose of drafting the regulation on invasive species. Moreover, in 2012 a database of invasive alien neophytes (incl. 45 taxa) for the Pannonian region was completed. According to the 2016 inventory carried under the East and South European Network for Invasive Alien Species (ESENIA), 13 346 invasive species, incl. 165 species of invasive plants occurred in Serbia. No IAS national monitoring system was in operation as of 2019, but the control of invasive plants was carried out inside PAs.

However, the 2019 6CBD NR by Serbia did not inform on the progress achieved in the development and adoption of the regulation on invasive species (on the basis of e.g., the above mentioned 2012 list of invasive plant species).

According to the 3EPR of Uzbekistan, in 2018 the country compiled its first list of 228 non-indigenous (alien) introduced or invasive plant species naturalized in the country (elaborated under the Global Register of Introduced and Invasive Species, GRIIS – which is also managed by the IUCN SSC Invasive Species Specialist Group, thus compatible with GISD mentioned in 3EPR of Morocco). The majority of animal IAS had been introduced intentionally for commercial purposes (in particular fish species, which already constituted some 50 per cent of the ichthyofauna, but also two small mammal species introduced for hunting purposes). The influence of two bird IAS on the native species was still considered insignificant in Uzbekistan. No IAS-related legislation has so far been adopted. Moreover, the Institute of the Gene Pool of Plants and Animals, which previously carried out scientific research on IAS, ceased to exist as a result of reorganization.

In 2020 Uzbekistan noted the 2020 Presidential Resolution "On measures to further improve the activities of the state plant quarantine service", which foresees the development of a digital map of the distribution of invasive and quarantine plant species, and that the country was developing methodological data concerning invasive species.

Conclusions:

From the EPR purposes point of view, the relevant section of the Republic of Moldova’s 3EPR can be considered as a model one: concise but providing the most comprehensive information on IAS, informing not only on their numbers (acquired from different sources) but also their adverse effects on both the economy and natural ecosystems, some details on the trends in the spread of some IAS throughout the

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country in particular regions, and reasons and consequences of this phenomenon. The only issue missing was the ‘country response’ towards the IAS pressure, neither mentioned under “pressures on species and ecosystems” nor “legal and policy framework” sections.

Another good example could be the 3EPR of Belarus, containing the information not only on IAS numbers but also describing in detail the IAS monitoring framework and effects of inventorying works, mentioning the related provisions of a legal act (2007 Law on Wildlife) and the procedure for adopting decisions on IAS control or eradication by regional administrations. What could be missing were the justification (mentioning adverse IAS effects on natural ecosystems) and the assessment of the effectiveness of implemented annual IAS control/eradication plans.

The presence and continuity of regular or long-term IAS-related research and monitoring determines the availability of data, indispensable for information-based policy and decision-making. It should be noted that information on IAS presence and spread was either missing or quite limited in the vast majority of the 3EPR countries, which made the proper understanding of the IAS-related challenge and the planning of adequate measures by their governments impossible.

Belarus and Bulgaria seem to be most successful among all 15 reviewed 3EPR countries, as within the 3EPR period both countries significantly progressed in identifying threats posed by IAS and reacted to such challenges, also by the development and implementation of IAS-related plans of actions.

**Resulting recommendations for the fourth cycle EPR:**

It is recommended that the main fourth cycle EPR focus should be on the progress in identifying and monitoring IAS, and on the evaluation of the effectiveness of the ‘active country response’ towards preventing the IAS introduction and reducing their adverse effects by the reviewed countries.

Such evaluation of progress made in respect to IAS can largely be facilitated by the review of the next CBD NRs in case of countries which incorporated IAS-related tasks in their current NBSAPs (e.g., Bosnia and Herzegovina, Bulgaria, Georgia, and North Macedonia).

However, the fourth EPR cycle ToR should be more precise and make it clear that not all alien species (which also include non-invasive or domesticated and cultivated ones) should be considered in experts’ reports, only the IAS.

This EPR sub-section should mainly focus on IAS which are likely to have adverse environmental impacts on natural ecosystems (by threatening natural habitats and/or native species), assess the adverse effects of their spread on natural ecosystems of the reviewed country, and evaluate the effectiveness of actions undertaken by the Governments towards the control or eradication of their populations (which should include thorough scientific research, monitoring, as well as the mechanism of early warning on the occurrence of new IAS on country’s territory).

1.1.2 Ecosystems

**Methodological remarks**

Similar to the case of EPR sub-sections concerning species diversity, the general description of ecosystems occurring in a reviewed country is very much an introductory basic information for the whole chapter on biodiversity and PAs.

Again, the aim of the EPR is not to describe different ecosystems in detail, much more indicate the ongoing changes, most often resulting from anthropogenic pressures on environment, assessed in the next section of each chapter on biodiversity (including ongoing human-induced climate changes, analysed under a separate chapter in some most recently conducted 3EPRs).
Nevertheless, the quality of such descriptions significantly varies among the 3EPRs, some only mention the main ecosystems or describe the geographical regions of the reviewed country, while some other EPRs carefully analyse the state of each main ecosystem, and elaborate on their natural components, native species, coverage by PAs, and threats to the preservation of these ecosystems.

Most often forest ecosystems were best researched and in result better described in EPRs than any other types of terrestrial (or aquatic) ecosystems. Also due to the fact that several 3EPRs contain a separate chapter on forestry (Belarus, Bosnia and Herzegovina, Georgia, and Mongolia) or a separate section or sub-section on forestry within its chapter on biodiversity (Albania, Tajikistan, Uzbekistan).

Wetland and marine ecosystems were described only for several countries, e.g., in correspondence with the assessment of the implementation of global and regional international agreements (incl. 1971 Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention), 1976 Convention for the Protection of the Mediterranean Sea Against Pollution, and 2002 Framework Convention for the Protection of the Marine Environment of the Caspian Sea), in the context of the separate EPR chapters on water management, or any other relevant separate chapter (e.g., on the Adriatic Sea protection in 3EPR of Bosnia and Herzegovina).

Other main natural ecosystems were most often described solely in EPR chapter on biodiversity and PAs; hence the quality of such brief descriptions does matter.

However, the main EPR objective under this sub-section should be to identify ongoing changes (trends in ecosystems) and evaluate country response to pressures threatening the state of natural ecosystems, by analysing strategies (not only formally adopted but also successfully implemented) and resulting measures applied by the Governments in order to prevent or mitigate the adverse effects of such pressures, in particular measures and activities aimed at ecosystem restoration.

In the ideal situation (most often not feasible, due to the general absence of relevant information) would be that each EPR includes an expert evaluation of the effectiveness of such response, which would then allow the proper assessment of country performance towards the conservation of natural ecosystems.

However, it should also be noted that the EPR period (usually less than 10 years) might often be too short to observe notable changes in several ecosystems, except for the most striking examples, like the Aral Sea disaster, affecting Kazakhstan and Uzbekistan.

**General description of country ecosystems in 3EPRs**

Non-forest ecosystems were only mentioned in 3EPR of **Albania**, while forest ecosystems were comprehensively described under a separate section of Chapter 9 on biodiversity, forestry and PAs.

In case of **Belarus** all geographic regions and ecosystems were briefly described, with the indication of current pressures and recent changes (while forest ecosystems were comprehensively described under a separate chapter).

For **Bosnia and Herzegovina** only lake, marine and forest ecosystems were described (under three separate chapters, other than chapter on biodiversity) while 3EPR chapter on biodiversity mentioned “252 ecosystems and unique biotopes that are important from both a European and global conservation perspective” and the “large variety of land, freshwater, marine and underground habitats”, but did not further elaborate on such.

3EPR of **Bulgaria** refers not to ecosystems, but to habitats (approach related to EU Natura 2000 designation process), including 166 habitats of conservation importance requiring specific conservation
measures which were successfully identified and included in the Red Data Book (with assigned CR, EN, VU or NT threat status), and mentioned the most threatened ones.

As for Georgia, all main ecosystems (forests, freshwater and wetlands, marine and coastal, semi-desert and steppes, mountains) were comprehensively described in its 3EPR Chapter 6 on biodiversity and PAs, including their brief characteristics and the identification of threats to particular ecosystems. Moreover, forest ecosystems were described in detail under the separate Chapter 11 on forestry and environment.

3EPR of Kazakhstan lists the main natural ecosystems and vegetation zones of the country, and provided statistical data on terrestrial ecosystems, but describes in detail only the forest ecosystems.

3EPR of the Republic of Moldova contains comprehensive description of the main ecosystems (steppe, wetlands, and forests, the last were best described) indicating threats to each of the above ecosystems.

In the case of Mongolia its EPR describes the 16 vegetation regions and 19 main natural ecosystems, as well as 4 larger ecoregions of the country including 16 smaller vegetation regions (which was possible due to the availability of a comprehensive in-depth assessment of gaps in biodiversity protection, prepared in 2010 by WWF Mongolia), descriptions of each ecoregion included short ecosystem and landscape characteristic, species composition, and the rate of ecoregion coverage by the state PA network, together with the identification of main threats. Moreover, forest ecosystems were described in detail under the separate Chapter 13 on forestry and environment. Map 3. Ecosystems, showing the spatial distribution of all 19 main natural ecosystems, as well as man-made transformed ones (industrial and urban areas, agricultural land) is annexed to the EPR.

3EPR of Montenegro (where a separate chapter on biodiversity was ‘traditionally’ missing) mentioned the reduction in the functionality and stability of natural ecosystems, particularly of forest and water ecosystems, but contains no more details, except for quoting the main six categories of threats for biodiversity (hence, relevant also to natural ecosystems) reported in the country’s 2010 4CBD NR.

As for Morocco, its EPR introductory chapter provided the general geographical characteristics of the country (indicating also some 6 or 7 main terrestrial and aquatic ecosystems), while Chapter 9 on biodiversity and PAs refers to 5 main ecosystems (which seems to be a proper introduction for the following contents on e.g., species) and later provided more detailed descriptions of the 2 ‘fragile ecosystems’ (oases and mountains) indicating threats, immediately followed by a short section on related policy framework.

In the case of North Macedonia, its 3EPR reported on 28 key ecosystem types (incl. 177 habitat types) identified in the country, but for conciseness reasons did not describe such, focusing more on the recent changes in the land use and resulting trends in ecosystems characteristic for forestry areas, agricultural land (incl. pastures and abandoned post-agricultural land, the latter highly affected by the ongoing succession of shrub and forest vegetation), indicating that wetland habitats were most threatened.

The draft 3EPR of Romania most comprehensively described forest ecosystems, while mountain, marine, and coastal ecosystems are merely mentioned, despite that the 2018 VNR by Romania described (VNR) the diversity of its natural ecosystems (incl. also grassland, wetland, riverine and riparian ecosystems) in its 22 ecoregions.

As for Serbia (where again a separate chapter on biodiversity was missing), its 3EPR only noted damages to forest ecosystems, as a result of increased timber harvesting, illicit forest felling and forest fires.

In the 3EPR of Tajikistan only the general geographical characteristics of the country are provided, no significant changes in the spatial distribution and extent of areas occupied by particular ecosystems, and no new sources of anthropogenic pressures on ecosystems were reported. Only forest ecosystems were described in detail, under the separate section of Chapter 8 (on biodiversity, biosafety, forestry and PAs).
In the case of Uzbekistan, the main ecosystems were comprehensively described in 3EPR Chapter 11 on biodiversity and PAs (additionally visualised by adding the map 11.1 of landscapes, showing the spatial distribution of the 13 main natural ecosystems, and the anthropogenic ones), including threat identification. Despite that Uzbekistan is always described as a forest-poor country, Chapter 11 includes a separate subsection on forest ecosystems, with quite detailed information, also concerning forestry operations.

Conclusions:

The description of main natural ecosystems and identification of threats for their conservation status was most complete in 3EPRs of Belarus, Georgia, Mongolia, the Republic of Moldova, and Uzbekistan.

Such basic information, introducing the chapter on biodiversity and PAs, was largely missing in 3EPRs of Albania, Bosnia and Herzegovina, and Tajikistan (and would also benefit possible fourth cycle EPRs of Montenegro and Serbia, in particular if a separate chapter on the above issues is finally included in their structure).

Resulting recommendations for the fourth cycle EPR:

Adding maps of ecosystem distribution throughout the country in 3EPRs of Mongolia and Uzbekistan largely facilitates the understanding of all biodiversity-related issues of these countries and is therefore highly recommended for the fourth EPR cycle.

A good practice example, worth recommending to all other reviewed countries, is mentioned in 3EPR of Bulgaria, where 166 most threatened natural habitats had been not only identified, but also officially included in the national Red Data Book.

Trends in ecosystems and 3EPR country response - ecosystem restoration measures and activities
(on the basis of the 3EPRs, VNRs and additional information provided in 2020 by countries)

Despite that the last comprehensive national forest inventory (NFI) of Albania dates back to 2004, the forest-related section of the 3EPR Chapter 9 on biodiversity, forestry and PAs reported on the decline in forest cover, resulting from forest land clearance for agriculture, overgrazing, logging for fuelwood, forest fires and illegal logging. According to Corine land cover data, between 2006 and 2012 the forest cover decreased by approximately 17 per cent. The 3EPR noted that in 2015 forests accounted for approx. 36 per cent of the country’s territory. According to the World Bank project launched in 2014, the volume of timber harvesting exceeded the net annual increment.

The Albanian parliament approved a 10-year moratorium on logging for industrial purposes and export in 2016 (with the exception of fuelwood used by local communities), as a result of which, as of early 2017, logging decreased to 20 per cent of annual forest growth capacity. Moreover, reforestation works (intensified since 2013) were carried out on the area of 800,000 ha. Nevertheless, according to 3EPR, such scope of reforestation works would not yet compensate the loss and degradation of forests throughout the previous three decades. Rehabilitation of degraded forest areas was included into the key strategic objectives of the 2016 Second National Strategy for Development and Integration for the period 2015–2020 (NSDI-II), which implementation can possibly be evaluated under the fourth EPR cycle. 3EPR did not assess trends in other ecosystems but mentioned efforts on restoration of the most important coastal wetlands.

The 2018 VNR by Albania provided more precise information on trends in the coverage of the country’s territory by forests, which increased from 37.99 per cent in 2013 to 38.42 in 2014, and 38.41 in 2015 and 2016 (hence, more than 36 per cent in 2015, indicated by 3EPR).
According to the additional information provided in late 2020 to the ECE EPR team, in December 2019 Albania approved the new strategy on forests (however the information on its contents was not provided).

3EPR of Belarus noted the increase of the forest cover from 38.5 to 39.6 per cent of the territory in 2009–2014. Within the same period the area of grasslands decreased by 3.86 per cent. The area covered by wetland ecosystems remained unchanged, but their state worsened: as of 2014, the area of 2.9 million ha of wetlands was drained for agricultural purposes, open marshes, forest swamp and reed habitats, as well as meadows and floodplains degraded as a result of forest and shrubs succession to previously open areas, while floodplain oak forest habitats were affected by climate change and changes in hydrological regime. Riparian ecosystems (e.g., meadows and sedge marshes) decayed as a result of the abandonment of traditional land-use practices (mowing and grazing). Riverine ecosystems suffered from surface water pollution caused by agriculture.

In response, the Council of Ministers approved the 2010 Strategy for the Conservation and Sustainable Use of Biological Diversity in the period 2011–2020, which goals mention ecosystems (which implementation can possibly be evaluated under the fourth EPR cycle). However, also in 2010 the Council of Ministers approved the State Programme of Conservation and Use of Reclaimed Lands for 2011–2015, envisaging the intensive works on the reconstruction and rehabilitation of melioration systems (on the area of 162,100 ha), agromeliorative works implemented on reclaimed agricultural lands (107,000 ha), cleaning of 23,200 km of the meliorative network from excess silting (along 23,200 km), and shrub vegetation (79,800 km). Chapter 7 on biodiversity and PAs emphasized “It is important that projects to rehabilitate melioration systems provide for environmental protection measures, in particular to prevent the pollution of surface water and groundwater” but did not consider the obvious inevitable adverse effects of these planned works on the state of wetland and meadow ecosystems, already affected by excessive drainage.

3EPR Chapter 7 on biodiversity and PAs stated that the Strategy on Implementation of the Ramsar Convention was approved by the 2009 Resolution of the Council of Ministers No. 177, which implementation resulted in the designation of 7 new Ramsar sites in 2012–2013 and submitting documentation of 5 more potential sites, updating national management plans for 3 bird species (great spotted eagle, great snipe, aquatic warbler) and development of such plans for 3 more species, as well as introducing a ban on spring hunting for waterfowl in 32 wetland areas.

3EPR Chapter 10 on forestry and environment stated that over the last preceding years (hence, within the 3EPR period) the areas covered by primeval forests and other naturally regenerated forests in Belarus remained stable (although the same chapter noted that reduction of areas of old-growth forests was one of the reasons for decline of populations of species which are used to live in climax forest communities), while planted forests increased by some 10 per cent.

However, as much as 51.8 per cent of forests were classified as protective forests, out of which 11.2 per cent (1.054 million ha) were, as of January 2011, designated as special protective forest sites, where only limited management interventions were allowed. Chapter 10 provided detailed information on the intensive reforestation and afforestation works in 2005–2014 (Figure 10.4), forest planting and sowing, as well as assisting the natural forest regeneration and preservation of undergrowth. However, EPR noted that forest rehabilitation and restoration works resulted in the uneven age structure and species composition in re-established forests. Nevertheless, forest ecosystems (that cover 42 per cent of the territory of Belarus) seem to be well managed and protected.

According to the most recent official statistical data, the value of SDG indicator 15.1.1 (Forest area as a proportion of total land area) increased for Belarus from 42.52 per cent in 2010 to 43.19 in 2020.

As for Bosnia and Herzegovina, its 3EPR Chapter 11 on biodiversity and PAs did not refer to ecosystem restoration but noted that forest areas decreased by 3.88 per cent. Chapter 8 on water management mentioned rivers and lakes and recommended (in SDG Box 8.1) investment of the environmental
protection funds fed by water taxes in the protection and rehabilitation of aquatic ecosystems. Chapter 9 on Adriatic Sea Protection did not explicitly mention ecosystem degradation, but identified potential threats to marine and coastal habitats, and recommended (Recommendation 9.2) the preparation of a national integrated coastal zone management strategy.

3EPR Chapter 12 on forestry and environment noted that according to the “current data” (no reference year was provided) in the FBiH the share of forests (which covered 1,465,600 ha) accounted for 56.2 per cent of the territory (or, together with other wooded land, as much as 64.89 per cent), while in RS forests covered 1,426,000 ha or 57.87 per cent of the territory, and that the forest cover has increased in recent years, especially since 2011.

However, some inconsistencies in the information on forests can be noted, as Chapter 12 noted that “The second NFI, which was conducted between 2006 and 2009, provides the most up-to-date forest information” (hence, the timeliness of the above “current data” is even less clear) while in the next sentences Chapter 12 referred to more update information, by saying that “In 2011, the forest and forestland area in the FBiH was 1,172,974 ha and in RS 982,893 ha. The second NFI shows that these areas have increased to 1,692,700 ha in the FBiH and 1,525,800 ha in RS from 2006 to 2009 (table 12.1)” (although table 12.1 does not contain data for 2011).

The comparison of the above data for 2009 and 2011 would indicate an alerting significant decrease by 30.7 per cent for the FBiH, and by 35.58 per cent for RS, within the very short few-year period (hence, not likely to happen).

3EPR Chapter 12 mentioned large areas of degraded forests and coppices (as a result of e.g., overharvesting and illegal logging) and threat of forest fires, while the areas under all kinds of silviculture works (incl. afforestation, support to natural regeneration, and improvement of the state of degraded forests) was decreasing in 2011–2015.

The 2019 VNR by Bosnia and Herzegovina indicated the constant slight growth in the forest coverage, from some 54.3 per cent of its territory in 2010 to almost 55.2 in 2016.

3EPR Chapter 9 on biodiversity and PAs of Bulgaria noted that “the vegetation types of wetlands (coast, swamps, marshes) and also halophytic, hydrophytic and psammophytic coenoses (coastal regions, steppe) were particularly threatened and close to complete destruction due to infrastructural developments”, while the increasing threat level and destruction of high mountain vegetation and habitats resulted from tourism development (which threatened also the Black Sea coast ecosystems).

Further Chapter 9 mentioned the conversion of grasslands into arable land, adversely affecting remnants of meadow and steppe vegetation, while the rural areas depopulation resulting in the abandonment of traditional practices (e.g., grazing) enhances forest and shrub succession to former meadows and pastures. Chapter 9 did not include any examples of the active country response to the above changes but mentioned the National Action Plan for Conservation of Wetlands of High Significance in Bulgaria 2013–2022, which priorities include long-term conservation of the wetland ecosystems and wetlands restoration; while the new NBSAP for the period 2016–2022 was being drafted at the time of the 3EPR (the implementation of both above policy instruments can possibly be evaluated under the fourth EPR cycle).

In its 2020 VNR Bulgaria reported on the restoration of riparian and wetland habitats in 10 Natura 2000 sites.

According to the FAO Global Forest Resources Assessment 2020 report on Bulgaria,\(^\text{14}\) indicated by the country during the self-assessment process, the coverage of forests accounted for “about one third of the country territory or 36% of the territory” or increased from 31.09 per cent in 2000 and 34.42 in 2010 to

35.50 in 2017 and 35.86 per cent of the country territory in 2020. The share of broadleaved forests accounted for 72 per cent of the forest area, and coniferous forests for 28 per cent. A significant part of the Bulgarian forest regenerated naturally, while the rate of afforestation in state-owned forests (which accounted for some 75 per cent of the total forest area) due to the lack of financing, low wages, absence of sufficient number of workers etc.

Chapter 6 on biodiversity and PAs of Georgia noted that the predominant forest ecosystems face numerous threats, incl. illegal logging, pests and diseases, intense grazing and unsustainable forest management practices. Aquatic ecosystems were modified and affected by drainage of wetlands, artificial regulation of water level in lakes, and discharges of pollutants from agriculture, industry, and households. Loss of habitats occurred also as a result of infrastructural developments (incl. HEPs), land uptake for transport network, industrial and urban development. Steppe ecosystems were threatened by unsustainable pastoral practices and climate changes. Chapter 6 did not explicitly refer to ecosystem restoration, except for mentioning the draft agriculture development strategy (2012–2020), focused on activities aimed at developing soil protection and land-reclamation infrastructure. Chapter 9 on agriculture and environment reported on overgrazing of 30 per cent of the sub-alpine and alpine pastures, and 50 per cent of the steppe and semi-desert ecosystems in the southeast of the Kura River basin, as well as of the upland watershed ridges. The 1994 Law on Soil Protection prohibited the degradation of pasture through excessive grazing, but no further regulations or policies followed.

Chapter 11 on forestry and environment emphasized that some 95 to 98 per cent of forests in Georgia have natural origins, 80 per cent were classified as soil- and water protective forests. The assessment of the state of forest ecosystems was impaired by the fact, that the last complete forest inventory was carried out in 1997. Chapter 11 reported on insufficient forest management (affecting the age structure), the 20 per cent reduction in canopy cover density in 2000–2010, clearance of oak forests for agriculture, viticulture, and orchardry; and the decline of floodplain forests due to the expansion of agriculture and construction works along riverbanks. Threats to forests included excessive grazing, illegal logging, and forest fires (however fires affected small areas, 200 ha per year on average, while the total area of forest accounted for 2,822,500 ha, thus some 40 per cent of the country’s territory). Surprisingly, reforestation works within the state forest fund land were carried out between 2001 and 2013 over only 628.13 ha (0.02 per cent of the total). Restoration and protection of forests was the subject of one of the eight thematic working groups established under the framework of the 2013 National Forest Programme process, each working group elaborated its action plan, but Chapter 11 did not further elaborate in its possible implementation and results.

According to additional information provided in 2020 by Georgia on its progress in achievement of SDG Target 15.1, forest area in Georgia accounted for 3.045 million ha, which amounted to 43.5 per cent of the total land area.

According to 3EPR Chapter 9 on biodiversity and PAs, all forests in Kazakhstan (covering only 4.7 per cent of the country’s territory) were classified as protective, well protected and sustainably managed, including the implementation of intensive ecosystem restoration and rehabilitation works, due to which the deforestation process has successfully been halted. Furthermore, the country conducted intensive afforestation works aimed at mitigating the adverse effects of the shrinking Aral Sea (incl. wind erosion and the resulting increasing salinization of adjacent areas), where 56,000 ha of saxaul forest were planted on the dry South Aral Sea bottom in 2006–2015. The Government also encouraged private land users to undertake afforestation initiatives.

In Appendices to its 2019 VNR, Kazakhstan provided values of the SDG indicator 15.1.1. Forest areas a proportion of total land area, indicating a slightly growing trend from 4.5 per cent in 2010 to 4.7 in 2018 (hence, the same value as provided in 3EPR Chapter 9).

However, according to the 5CBD NR, as much as some 75 per cent of the country territory is exposed to a high risk of environmental destabilization, where signs of ecosystem degradation were observed in some
two thirds of the country, in particular affecting desert and steppe ecosystems (which together cover 91.1 per cent of the country territory). Threats to terrestrial ecosystems included the overgrazing of pastures, land uptake by the rapidly developing mineral-resource-extracting industrial sector, water pollution and soil contamination. Aquatic ecosystems (including the Caspian Sea ecosystem) were threatened by water contamination, acidification, eutrophication, and salinization. As a result of climate changes all aquatic, coastal and marsh ecosystems experienced significant periodic fluctuations in water level and salinity, while important lake ecosystems continued to disappear from the landscape of Kazakhstan.

In 2017 the Government adopted the Law on Pastures, which contains an important provision aimed at enhancing the natural regeneration of natural ecosystems degraded by overgrazing. Chapter 9 mentioned works on the restoration of steppe ecosystems. However, the NBSAP (which could possibly provide the strategic framework for ecosystem restoration activities in Kazakhstan, harmonized between sectors) approved in 1999 by the Ministry of Natural Resources and Environment, remained non-binding, as not yet endorsed by the Government.

3EPR of the Republic of Moldova noted the ongoing shrinkage of highly fragmented natural or semi-natural habitats of steppe grassland ecosystems (that survived only in some 2 per cent of the country, less than a half of these included in PAs) as a result of intensive agriculture pressures. Wetland habitats were affected by agricultural practices (e.g., excessive grazing), drainage and hydroengineering works. Forest ecosystems were also highly fragmented and unevenly distributed in the scattered pattern throughout the country (800 patches between 5 and 5,000 ha in size). The share of forest areas increased in 2002–2010 from 10.3 to 12.1 per cent of the country’s territory (planned to reach 13.2 per cent in 2015).

In its 2020 VNR the Republic of Moldova noted that forests covered 11.2 per cent of the country’s territory, while in the course of the 2020 self-assessment the Republic of Moldova indicated its 2020 “Statistics for Sustainable Development Goals” report, according to which the value of the SDG indicator 15.1.1 (forest area as a proportion of total land area) accounted for 13.7 per cent in 2010 and 13.9 per cent in 2018 (hence, considerably more than 11.2 reported in the 2020 VNR). The above discrepancy is probably well explained in 6CBD NR, reporting that forest vegetation (as such) covered appr. 450,000 ha (13.7 per cent of territory), while the (actual) forest cover accounted for only 379,300 ha (11 per cent). The above data most probably relates to 2017 or 2018, as the 6CBD NR was submitted at the end of 2018 (and updated on 2 January 2019).

According to 3EPR, most forests in the plains were planted ones, of homogenous tree stand age structure, which reduces their resistance to adverse pathogenic and abiotic factors, in result the health condition of many forests stands considerably worsened. Furthermore, the scale of illegal logging of all types of forest remains a serious problem, riparian forests (managed not by the state but the local authorities and/or communities) were partly destroyed in result of overharvesting, while forested strips and hedges between agricultural fields (being important linkages for ecological connectivity, by providing habitats and migration routes for animals) were continuously threatened by degradation, also as a result of the state-driven process of consolidation of small-scale agricultural land plots.

As for the country response to the above trends, 3EPR Chapter 9 on biodiversity and PAs mentioned the 2011 National Programme on the Environmental Network for 2011–2018, including the afforestation of degraded sites (its implementation could not yet be assessed in 3EPR, carried out in early 2013). Forest ecosystem restoration related activities in 2007–2010 included forest regeneration by tree planting (3,446 ha), support for natural forest regeneration (10,468 ha), and afforestation of degraded sites (20,681 ha). However, the intensity of the above measures constantly decreased within the above period (Table 9.2: Forest regeneration and afforestation), conducted on 11,446 ha in 2007 and only 3,286 ha in 2010. Furthermore, the main tree species used either for forest restoration or for afforesting degraded sites was black locust (species native to the eastern USA, naturalized on other continents, considered an invasive species in some countries) the use of which for the restoration of forest stands is ecologically questionable.

Simultaneously, most of the native forest-forming species (hornbeam, maple, beech and lime) were not planted, while only 700 ha of oak forests were established.

The 2020 “Statistics for Sustainable Development Goals” report shows the fluctuating (but increasing) trend in the scope of forest restoration works, from 2,743 ha in 2010 to 5,239 in 2014 and 4,853 ha in 2018.

According to 3EPR, no national programme towards the restoration of riparian forest (also important for flood prevention or drought mitigation) was in place. However, wetland ecosystems were partly protected in three Ramsar sites (encompassing 4 per cent of the country’s territory), and the implementation of active restoration measures concerning riparian forest and wetlands commenced shortly before the 3EPR (mainly project-driven, in the absence of the national wetlands policy, or programme for wetlands conservation, required by the Ramsar Convention Strategic Plan for 2009–2015, even though the Republic of Moldova established its Ramsar National Committee).

As for Mongolia, EPR Chapter 11 on biodiversity and PAs contains a small sub-section concerning threats to ecosystems occurring in each of the four larger ecoregions, differing in environmental conditions and land-use pattern. Climate changes, overgrazing and desertification of rangelands, overharvesting of biological resources (timber and wildlife), and the expansion of mining activities and associated infrastructure development were the main threats to the integrity of natural ecosystems in the country.

Country response aimed at mitigating the effects of illegal logging and timber trade (in particular in firewood) is based on the application of the community-based forest management approach (contracting and licensing forest user groups). Other ecosystem-related measures were planned in the framework of the 2015 National Biodiversity Programme for the period 2015–2025, where its Goal 5 assumes including “at least 30 per cent of each representative of the main ecosystems, all patch and vulnerable to climate change ecosystems” into the national PA network and improving their management. Goal 7 aims at increasing forest cover to 9 per cent by 2025 through the improvement of forest management. Goal 9 aims at reducing and preventing pasture overgrazing and degradation, while Goal 10 relates to undertaking detailed EIA, in order to release the land important for biological diversity from mining and agriculture use and take it under protection. However, actual implementation is undermined by the general absence of sufficient funding. The mid-term evaluation of the implementation of this Programme was planned for 2020 (therefore, the implementation of the above provisions of the 2015 National Biodiversity Programme can possibly be evaluated under the fourth EPR cycle).

3EPR Chapter 12 on land management noted several policy instruments which can potentially enhance the restoration of ecosystems: the 2014 Green Development Policy and its 2016 Action Plan for the Implementation of Green Development Policy for the period 2016–2030 (which sets the objectives to rehabilitate at least 70 per cent of all degraded and eroded land), the 2016 Governmental Action Programme for the period 2016–2020 (aimed e.g., at improving the rangeland use and protection, decreasing degradation and desertification), and the 2010 National Action Programme to Combat Desertification 2010–2020 (aimed at coping with and reverting desertification and land degradation in Mongolia, also by increasing the participation of land users in restoration of degraded areas).

3EPR Chapter 13 on forestry and environment noted declining trend in closed forest area (by 272,900 ha in 2011–2016), and the increase of forest areas occupied by shrubs (related to permafrost thawing process in the taiga) as well as on reforestation activities (since 2000 covering some 8,000–9,000 ha per year on average) which includes the establishment of forest strips (incl. the large-scale Green Belt afforestation programme, aimed at reducing soil erosion and rangeland desertification), and supporting natural regeneration in the forests. According to the SDG-related box in Chapter 13, the forest area accounted for 7.85 per cent of the total land area.

In its 2019 VNR Mongolia stated that “A total of 7.9 percent of the total territory or 12.28 million hectares of land is covered by forest”, while in Annex 2 to its 2019 VNR, Mongolia provided values of the SDG
indicator 15.1.1, according to which the forest area accounted for 9.2 per cent in 2015 and 2016 (hence, much more than 7.9 given, or 7.85 in 3EPR).

As for the planned activities, some possible discrepancies can be observed, as the 2015 State Policy on Forests set up the target to increase the area of closed forest to 8.3 per cent of total Mongolian territory by 2020 and to 9 per cent by 2030, the 2016 Mongolia Sustainable Development Vision 2030 sets the target of 8.5 per cent by 2020, 8.7 per cent by 2025 and 9.0 per cent by 2030 (the last value same as set by the 2015 State Policy on Forests), while the 2015 National Biodiversity Programme set the target to increase the forest cover to 9 per cent of the country’s territory already by 2025 (which might not concern closed canopy forests, but forests in general).

Confusing and contradictory statements affect the credibility of the assessment of trends in forest ecosystems in 3EPR of Montenegro (other ecosystems were not described, as a separate chapter on biodiversity was missing). Chapter “Introduction” informed “There have not been any changes in Montenegro’s land cover. The forested area’s share of the total land area was 40.4 per cent in 2011 – exactly the same as in 2007”. However, the same chapter contains an information that the forest area expanded from 7,180 km² in 2007 to 9,640 km² in 2013 (i.e., by 34.3 per cent) and in result, as of 2013, forests covered 69.8 per cent of Montenegro’s land area. The latter version is seemingly confirmed by corresponding statistical indicators in Annex III and Chapter 5 on the implementation of international environmental agreements, which mentioned the MDG Progress Report 2013 saying “A step forward was recorded in relation to indicator 3: the proportion of forests and forestland increased from 54 per cent to almost 70 per cent”, which would then indicate a major success in forest ecosystems restoration.

Hence, in the light of the above, several resulting questions would then become fully justifiable: “How was such considerable increase in the forest cover (by more than one third, or over the 29.4 per cent of the country’s territory) of Montenegro possible within just a couple of years?” (2007 vs. 2013) and “was it due to the large scale, costly and successful reforestation and afforestation efforts undertaken throughout the last few years?”.

Alas, the response is simple, quite disappointing, and well-hidden in the 3EPR: the next sentence of Chapter 5 concerning MDGs explains this apparent miracle, by saying “However, the increase can be partly attributed to the fact that the new data is based on the actual situation derived from the first NFI, which was prepared in alignment with internationally recommended definitions of forests and forestland, while earlier data was based on available forest plans and assessments which used different methodologies. The increase in the indicator value points to, but cannot be fully and unambiguously interpreted as an actual increase in the forest area”. Moreover, Chapter 6 on climate change mitigation and adaptation stated that “the NFI showed that there are more forests than estimated”. As this NFI was not yet finalized at the time of the 3EPR, the possible progress in afforestation can only be assessed under the fourth EPR cycle.

Furthermore, 3EPR stated that “Since 2007, damage affecting the forest has contracted in all categories except damage caused by humans (table I.1). The most important trend has been the diminishing effect of fires on forested areas”, which did not take into account that forest fires are often human-induced (e.g., in valuable natural forest ecosystems, where the presence of a PA can ban the development of recreational infrastructure, like holiday or skiing resorts).

3EPR mentioned the 2013 document Development Directions of Montenegro for the period 2013–2016, which objectives include the preservation and restoration of ecosystems; and the GEF project on Lake Skadar-Shkodra Integrated Ecosystem Management (implemented in 2007–2012) including actions to reduce water contamination (which would then help to rehabilitate the aquatic ecosystems of the lake).

EPR Chapter 9 on biodiversity and PAs of Morocco elaborated more on threats to species survival than pressures on ecosystems but indicated changes in the quality and quantity of water resources, and habitat loss, change and degradation (both factors enhanced by climate changes and agricultural pressure on
intensification and increased irrigation), where the loss, change and degradation of habitats was linked to rangeland clearance for agriculture and deforestation. The data on deforestation rate varied among sources and shall be interpreted with caution. Fragile (and most threatened) ecosystems include oases and mountain ecosystems.

The country response included the development of the Strategy on Planning and Saving Oases in Morocco (probably the same or similar to the Strategy on Oases Management and Restoration described in Chapter 1 on policymaking framework for environmental protection and sustainable development) and the Strategy on Planning and Sustainable Development of the Middle Atlas Mountains, followed by the implementation of both above strategies in the context of territorial development programmes. Moreover, Chapter 9 mentioned the 2006 National Action Plan to Combat Desertification (not mentioned in Chapter 1), the 2006 Strategy for Forest Development, and the 2007 National Forest Programme. However, Chapter 9 reported on their insufficient implementation and enforcement (e.g., missing regulations on forest exploitation and grazing).

More details on actual and planned ecosystem restoration measures were available in Chapter 5 on implementation of international agreements and commitments, mentioning the National Agency for the Development of Oasis Zones (established in 2011) which tasks include protection of oases, as well as the adoption of the 2009 Reforestation Plan and the National Strategy for Control and Monitoring of Forest Health (for 15 years, thus until 2024 or 2025), including afforestation with autochthone species, and the 2001 National Action Programme to Combat Desertification (for 20 years, thus until 2021 or 2022). Furthermore, a project launched in the oasis Tafilalt was mentioned, expected to plant one million date palms by 2015, protect palm groves, recover and rehabilitate the oases, and plant 2.9 million palm trees by 2030. Hence, implementation of the above long-term reforestation plans and projects, as well as of the 2001 National Action Programme to Combat Desertification can possibly be evaluated under the fourth EPR cycle, by assessing the progress of ecosystem restoration activities undertaken in Morocco.

In its 2020 VNR Morocco reported on the forest regeneration and reforestation measures undertaken on the area of approx. 35 thousand ha each year (which resulted in the slight increase in the forest coverage of the country’s land area from 8.0 per cent in 2015 to 8.06 per cent in 2019), on forest monitoring activities, and on the significant progress in the coverage of forest management plans, available for 83 per cent of forests in 2019, compared to only 62 per cent in 2015.

According to the draft (4th cycle) EPR, in 2017 Morocco launched the National Wetlands Strategy 2015–2024 and resulting Action Plan, which stipulate the nomination of 30 new Moroccan sites for inclusion to the List of Wetlands of International Importance (the Ramsar List), and the implementation of 60 priority integrated wetland restoration action plans. In February 2020 Morocco adopted the National Integrated Coastal Management Plan, in order to promote a resilient, inclusive, sustainable, and efficient development of the country’s coastline, with the objective of reconciling environmental protection and economic activity.

According to 3EPR Chapter 11 on biodiversity and PAs of North Macedonia, some changes in the spatial extent of areas covered by the main natural ecosystems were observed in in 2011–2017, the share of forests increased from 38.18 to 38.95 per cent of the country’s territory, even despite the decreasing trend in afforestation activities undertaken within the above period (553 ha in 2017 vs. 2,081 in 2011), hence most probably due to natural forest succession. The share of pastures (thus meadow ecosystems) increased from 23.65 to 29.09 per cent, despite the ongoing succession of shrub and forest vegetation on abandoned post-agricultural land in depopulating rural areas (in particular in high mountain regions). Although the national inventory of forest resources required by the 2009 Law on Forests was not yet finalized at the time of the 3EPR, available sources indicated that within the above period the areas overgrown by deciduous and mixed forests increased, while the areas of coniferous and degraded forests decreased. Degraded forests (which could particularly need ecosystem restoration measures) at the end of 2017 covered 44,356 ha, thus over 4 per cent of the total forest area. The 5CBD NR indicated that most threatened were the wetland habitats, degraded during drainage works undertaken in the past, as well as ongoing urbanization. Grassland and forest ecosystems (in particular oak forests and shrublands) were
threatened by fires. Riverine ecosystems were threatened by the construction of artificial water reservoirs (incl. HPPs). 3EPR also mentioned the impact of tourism sector development pressures on both terrestrial and aquatic ecosystems, also inside PAs.

The draft 3EPR of Romania in its Chapter 11 on biodiversity and PAs stated that 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 habitat, 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. Chapter 11 provided inconsistent data on forests, by stating that the share of forest area in the total land area increased from 28.32 per cent in 2010 to 30.12 per cent in 2016, i.e., by only 1.8 per cent, and as of 2020 remained at the same level, while the same Chapter stated that “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)”. The 27.6 value is probably proper, confirmed by 2018 VNR by Romania, reporting that the area covered by forests accounted for some 6.565 million ha, thus 27.5 per cent of the territory, where almost a half of forests has been managed for “watershed conservation” rather than commercial purposes, and that 47 per cent of the country’s land area was covered with natural and semi-natural ecosystems.

It should be noted that 2018 VNR by Romania comprehensively elaborated on its ecosystems and species diversity, as well as major threats and pressures, and a number of measures implemented.

As for Serbia (where separate chapter on biodiversity was absent), 3EPR provided almost no information on trends in ecosystems and ecosystem restoration measures undertaken. Only the forests were described, however the related information is scattered among several 3EPR chapters: Introduction, Chapter 1 on legal and policymaking framework and its practical implementation, Chapter 3 on economic instruments, environmental expenditure and investments for greening the economy, Chapter 5 on the implementation of international environmental agreements, and Chapter 6 on climate change mitigation and adaption).

However, data discrepancies on the size of forests can be observed, as 3EPR Chapter 1 stated that “According to the 2010 Spatial Plan for the period 2010–2020, optimal forestation would be 41 per cent of the territory of the country (currently 29.1 per cent)”, where “currently” meant the time of conducting 3EPR in 2014. Chapter 5 noted that the “percentage of forested areas in relation to the total area of Serbia grew from 25.6% in 2000 to 32% in 2012”. The latter is compatible with data in the 3EPR Introduction, Figure I.4: Land use in 2011 (where the share of forest area accounted for 31 per cent), and further confirmed by statistical data provided by the Serbian Environmental Protection Agency (SEPA) in Annex III: Key data and indicators available for the review. However, the credibility of all statistical data concerning “Ecosystems and biodiversity” in Annex III is questionable, as almost all indicators in this category (in particular all indicators concerning “Forests and other wooded land”) were of the same value throughout the whole 2007–2013 time series. In result, according to data from Annex III, the total area of forests and other wooded land in Serbia accounted for 28,800.0 km² or 32.0 per cent of the total land area already in 2007 and remained unchanged until 2013. 2019 VNR by Serbia indicated (Annex 1: Statistical Review) that the forest cover of the country as of 2015 accounted for 31.1 per cent, which would then mean a decreasing trend.

The above data discrepancies are probably explained by the 2019 6CBD NR by Serbia (indicated to the ECE EPR team in 2020 as an additional source of information), according to which, the value of SDG indicator 15.1.1 depends on the method of remote sensing and imaging used: according to CORINE Land Cover for 2018 the area under forest in Serbia (excluding the territory of the Autonomous Province of Kosovo and Metohija) was 2,380,917 ha (30 per cent of the country’s territory), while according to SPOT5 satellite images the above area accounted for 2,654,000 ha (some 35 per cent), hence the value of SDG indicator 15.1.1 significantly differed. However, in the next sentence, 6CBD NR referred to SPOT5 satellite images made in 2020/2011 and stated, “the area under the forest is 31 956 km², which represents about 36 % of the territory of Serbia”, which information is not consistent with the previously quoted measurements (2,654,000 ha and 35 per cent vs. 3,195,600 ha and 36 per cent of the total territory).
Regardless of the size of forest areas, 3EPR Chapter 3 noted that 65 per cent of all forests in Serbia were coppice (low quality forests, mainly used as fuelwood). The introductory chapter stated that in forest felling increased by 26.1 per cent, and forest damage increased by 66.7 per cent over the review period (however based on data only for 2007–2011), where initially the main source of damage (other than natural inclement conditions) were illicit felling, while in 2011 the forest fires cause almost equal damage to forests as illicit felling.

Country response included the 2006 Forestry Development Strategy (to be implemented through the national forestry development programme, expected to include concrete actions and measures, such programme had only been drafted but not yet adopted prior to 3EPR in 2014), the 2011 National Biodiversity Strategy for the period 2011–2018, and the 2010 Spatial Plan for the period 2010–2020 (OG 88/10). 3EPR contains no information on e.g., the scope of reforestation, or any other ecosystem restoration activities in Serbia.

Information made available for the 3EPR of Tajikistan was not sufficient to properly assess trends in ecosystems, as e.g., the last NFI was carried out before 1991, moreover no systematic monitoring of forest ecosystems had been carried since 1991. However, the vast majority of forests in Tajikistan had been completely destroyed in the past decades, only their small remnants survived (mainly in more remote and sparsely populated areas), and were gradually decaying, due to the growing pressure on their resources. Official statistical data on forests were inconsistent, but the forest cover cold be estimated at 2.95 per cent of the territory, the area of the state forest fund accounted for 1.8 million ha (which included only 0.4 million ha of actual forests, and as much as 1.4 million of non-forested areas, e.g., pastures). Remaining forests were under constant pressure of illegal firewood collection, and excessive livestock grazing (which made the natural regeneration of pistachio light forests no longer feasible and resulted in the decline of areas covered by the juniper forests by some 2 to 3 per cent per year). In result, the annual rate of deforestation in Tajikistan was higher than the annual natural increment of its forest ecosystems. Grassland ecosystems were also threatened by overgrazing, in particular the winter pastures located at the lower altitudes. Aquatic ecosystems were degraded by the discharge of wastewaters, while some riverine ecosystems were destroyed in the course or as a result of HPPs’ construction.

Within the 3EPR period no new policy documents concerning biodiversity conservation had been adopted in Tajikistan, the outdated 2003 NBSAP officially remained the main strategic planning document for biodiversity conservation and natural resources management in Tajikistan, however gradually forgotten, as the original timeframe for the implementation of the vast majority of specific NBSAP measures were originally planned for implementation already in 2004–2006. However, the NBSAP objectives and planned measures have never been translated into detailed annual operational plans. The situation became even less clear with the adoption of the 2006 National Environmental Action Plan (NEAP) and its 14 thematic action plans, including an Action Plan on Biodiversity Conservation. No assessment of the NEAP implementation was available, while the evaluation of NBSAP implementation in 2010 indicated that only 3 per cent of 373 specific measures were fully, 11 per cent partly implemented, while the implementation of the remaining 86 per cent was still pending.

As for the active country response in the ground, the reforestation activities within the 3EPR period were still well below (less than a half) the necessary threshold value of some 4,500 ha per year (which could then at least offset the deforestation trend). However, the seedling survival rate was low (between 60 and 70 per cent), also due to the lack of forest nursery and plantation maintenance, as well as the improper selection of species for re-forestation (incl. non-native species, not always adapted to the local conditions even if fast growing in biomass volume). Simultaneously, fruit tree planting widely promoted by the Government successfully competed for available land and funds with forest restoration (although fruit trees yield product and bring profit immediately, orchards would never yield the same volume and quality of firewood or timber for construction and industrial purposes as forests). Simultaneously, according to official statistics, activities aimed at enhancing the natural forest regeneration have been completely abandoned in recent years.
To summarize, the state of non-forest ecosystems could not be assessed under 3EPR due to missing data, the state of forest ecosystems could be best described as disastrous and alerting, while the country response was not adequate, and even included counter-productive and perverse incentives. However, around the time of the 3EPR a draft Strategy for the Development of the Forestry Sector for the period 2016–2030 and the corresponding draft Action Plan for 2016–2020 had been submitted for adoption by the Government, therefore the fourth EPR cycle could possibly evaluate the progress in its adoption and actual implementation in Tajikistan.

According to 6CBD NR submitted by Tajikistan “An action plan for individual ecosystems and priority plant and animal species of protected areas has been developed”, however it remains unclear which individual ecosystems of individual species have been covered, and whether the implementation of such action plan/s already commenced.

3EPR of Uzbekistan stated that, according to the 2019 6CBD NR, natural and semi-natural ecosystems and landscapes extended over some 82 per cent of the country, the remaining 12 per cent had been considerably transformed, due to agricultural practices and urbanization. Desert and steppe ecosystems (incl. those used for agricultural purposes) encompassed 85 per cent, mountain ecosystems around 13 per cent, riverine, riparian, and floodplain in river valleys for the remaining 2 per cent of the territory (incl. the remnants of riparian tugai forests in the Amu Darya River delta, which accounted for one fifth of all tugai forests left in Central Asia).

The forests cover of the country’s territory slightly increased from 6.63 per cent in 2010 to 7.26 in 2019. Due to their scarcity, all forest in Uzbekistan all forests were classified as protective ones, well protected and sustainably managed (no commercial timber harvesting was allowed, except for sanitary fellings). Simultaneously, the share of the total area of the “state forest fund land” increased from 21.08 per cent to 25.09 per cent of the country’s territory (however, it should be noted that this statistical land classification category also includes areas potentially suitable for afforestation, and that the national inventory of forests and state forest fund land was last carried out in 1987).

At the time of the 3EPR all natural ecosystems in Uzbekistan were seriously threatened, partly due to anthropogenic pressures (incl. land uptake for mining and agricultural purposes, and the excessive grazing, also in mountain forests) but also as a result of the global climate changes (which further exacerbated desertification, habitat degradation, the threat of steppe and forest fires, salinization of soils and waters, and in particular drying out of watercourses and reservoirs, causing the loss or major decline of aquatic ecosystems).

However, the most striking example of ecosystem degradation is the environmental disaster in the Aral Sea region (shared with Kazakhstan), which resulted in the shrinkage and partial disappearance of the sea itself (hence, the complete loss or irreversible alteration of the marine ecosystem) as well as nearby lakes in the Amu Darya delta, degradation of tugai forest and wetland habitats, which together caused the massive loss and rapid decline in biodiversity at the regional scale. In result, almost the entire marine ecosystem and a large part of coastal and wetland ecosystems were gradually replaced by the emerging sandy-salty desert ecosystem (the so-called Aralkum Desert, encompassing over 5.5 million ha, including over 3.3 in Uzbekistan). Moreover, 3EPR Chapter 6 on the implementation of international agreements and commitments mentioned the 2019 preliminary LDN TSP assessment, indicating that some 26 to 28 per cent of the country area was, as of 2015, affected by degradation (according to Fig. 6 in the above LDN TSP report, besides the former Aral Sea region, also the Ustyurt Plateau, Kyzylkum Desert, mountainous and sub-montane regions were strongly exposed to desertification, as mentioned in 3EPR Chapter 11 on biodiversity and PAs).

In response, in order to mitigate the adverse effects of such pressures and prevent further biodiversity loss and land degradation, Uzbekistan implemented extensive ecosystem restoration and rehabilitation measures, in particular the afforestation of the dried seafbed of the former Aral Sea, restoration of aquatic and wetland ecosystems in the Amu Darya River delta, and the preservation of tugai forest ecosystems in the Amu Darya River delta and in the lower reaches of this river. Land reclamation works included afforestation and planting desert vegetation, fixing moving sand and absorbing salt. Between 2010 and 2018, forest plantations were established on 144,691 ha of the exposed seafbed. The progress of afforestation works was initially slow (between 15,000 and 16,000 ha per year), then constantly increased in the period 2014–2018. In 2018 the Government planned the reforestation of further 500,000 ha in 2019–2021, but already by the end of March 2019 some 720,000 ha had been prepared for planting, and some 400,000 ha of forest plantations had been established.

However, it should be noted, that despite the unprecedented scale of the above afforestation efforts, their effects might turn out to be much less spectacular, mostly depending on the planted tree seedlings’ survival rate (which, according to official statistical data, was much lower than the 60–70 per cent rate achieved during the afforestation measures carried out in Tajikistan, the seedling survival rate in the Aral Sea region declined from 44 per cent in 2013, 2015 and 2016, to 41 per cent in 2014, and only 37 per cent in 2017). Secondly, the above measures were not particularly aimed at the restoration of the lost marine ecosystem (which is probably no longer feasible and could impede the mining activities recently launched in the exposed sea bottom), much more at the mitigation of the adverse environmental effects of the Aral Sea disaster. The ultimate result would in fact be the creation of the new, man-made ‘Aralkum’ ecosystem. Furthermore, such spectacular but costly efforts, aimed at forest planting in the Aral Sea region, seemed to compete with e.g., regular forest ecosystem restoration measures aimed at supporting the natural regeneration of already existing forests (according to official statistics, the extent of forest areas where such measures were conducted considerably declined, from 17,600 ha in 2014 to only 6,250 ha in 2018).

In its 2020 VNR Uzbekistan reported that the value of SDG indicator 15.1.1 increased from 6.5 per cent in 2015 to 7.1 in 2018 (hence, provided less update information than available in its 3EPR), mentioned its Forestry Development Program 2020–2024, and the Strategy for the Conservation of Biological Diversity for the period 201–2028. Further Uzbekistan mentioned its future challenges (well corresponding to 3EPR recommendations), related to combating the desertification of the Aral Sea zone, need for the improvement of the environmental monitoring system, and the objective to increase the total forest area by 6,750,000 ha by 2030 (which would then require conducting afforestation works on 295,700 ha per year, or achieving 4.4 per cent annual increase of the total forest area).

Conclusions:

The above summary of the 3EPR information (based on tracking and extracting relevant data from different thematic Chapters) concerning the assessments of the state of natural ecosystems, and efforts undertaken (or not) towards their maintenance, preservation and restoration shows that all main representative natural and semi-natural ecosystems, providing important ecosystem services, were increasingly threatened in all reviewed countries (regardless whether located in e.g., South Eastern Europe, or Central Asia) by numerous anthropogenic pressures, as well as adverse effects of ongoing global climate changes.

It should be noted with concern that several 3EPRs apparently paid much less attention to the state and restoration of ecosystems than to the protection of species diversity (despite that the conservation status of threatened species largely depends on the state and viability of ecosystems harbouring their natural habitats).

Usually the spatial extent and state of forest habitats was best described and documented in 3EPRs, while the proper assessment of the state of other important main ecosystems was probably not possible due to the missing data.
Similarly, several 3EPRs (regardless of whether including a separate chapter on forestry or not) elaborated solely on policies, and ecosystem maintenance and restoration measures related to forestry management, while policies and measures towards the restoration of non-forest ecosystems were rarely mentioned (except for 3EPRs of Bulgaria, Kazakhstan, Mongolia, Morocco, the Republic of Moldova, and Uzbekistan).

However, information relevant to ecosystem restoration issues was most often limited to mentioning different policy instruments (e.g., national strategies, action plans and programmes), either these already adopted, or only drafted prior to 3EPR, while their adoption was still pending. Hence, either the existing or planned ‘declarative country response’, while the assessment of the implementation of already adopted policy instruments was largely missing (probably due to the missing information, and lacking national evaluations, e.g., mid-term progress reviews, or final reports).

Furthermore, the policy framework relevant to ecosystem restoration was not always complete, as some countries (Bulgaria, Kazakhstan, and Uzbekistan) had no valid NBSAPs at the time of the 3EPR, required by the CBD.

Furthermore, despite that all 3EPR countries are Parties to the 1971 Convention on Wetlands of International Importance Especially as Waterfowl Habitat, the national wetlands policy, or programme for wetlands conservation (required by the Ramsar Convention Strategic Plans for 2009–2015 and 2016–2024) were most often missing. The only exceptions were the 2009 Strategy on Implementation of the Ramsar Convention in Belarus (which implementation included the designation of Ramsar sites, development and updating of national waterfowl species management plans, and introducing a ban on spring hunting for waterfowl in 32 wetland areas), the National Action Plan for Conservation of Wetlands of High Significance in Bulgaria for 2013–2022, and the recently adopted National Wetlands Strategy 2015–2024 and resulting Action Plan in Morocco.

Several other ‘best practice examples’ can also be identified on the basis of the above summary information, e.g., the application of the community-based forest management approach (contracting and licensing forest user groups) applied in Mongolia with the aim to mitigate the effects of illegal logging and timber trade (however, the evaluation of its results will probably not become possible until the next cycle EPR review).

Nevertheless, at least equally important were the few examples of ecosystem restoration activities implemented on the ground, including e.g., intensive forest restoration and rehabilitation works carried out in Kazakhstan, active restoration measures concerning riparian forest and wetlands in the Republic of Moldova, or the active restoration of aquatic, wetland, and tugai forest ecosystems in the Amu Darya River delta in Uzbekistan (however, again the evaluation of the tangible results of the above activities remains a task for the fourth EPR cycles).

Last, but not least, some negative examples can also be identified, including e.g., the implementation of intensive melioration works for agricultural purposes in Belarus, which can further worsen the state of wetland and meadow ecosystems (already affected by excessive drainage), and impede the implementation of ecosystem restoration measures (it should be noted that the state programme on melioration was adopted in the same year as the strategy for the conservation and sustainable use of biological diversity); the ecologically questionable use of non-native tree species for the restoration of forest stands in the Republic of Moldova and Tajikistan, or the counter-productive and perverse incentives for fruit tree planting at the cost of afforestation and forest ecosystem restoration in Tajikistan (allowing short-term profits, but further aggravating the shortage of fuelwood and timber, while the annual demand for fuelwood exceeds the total timber standing stock of all forests remaining in this country).

**Resulting recommendations for the fourth EPR cycle:**

The fourth EPR cycles should not only check the progress in the adoption of new national policy instruments relevant to ecosystem restoration (including e.g., these drafted prior to 3EPR, indicated above) but pay
particular attention to the assessment of the effective implementation of such strategies, action plans, and programmes.

The timeframe for the implementation of several above mentioned (already adopted) national policy instruments has either recently expired (in 2016 in case of Montenegro, 2018 in the Republic of Moldova, and Serbia), is close to expiry year (2020 in case of Albania, Belarus, Bosnia and Herzegovina, Georgia, Mongolia, and Serbia), or shall expire within the coming decade (e.g., in 2021 in case of Uzbekistan, 2022 in Bulgaria, Morocco, and Uzbekistan, 2023 in North Macedonia, 2025 in Mongolia and Morocco, 2027 in North Macedonia, 2028 in Uzbekistan, 2030 in Mongolia and Uzbekistan). Hence, their actual implementation can possibly be assessed under the fourth EPR cycles.

It is highly recommended that such assessments verify the tangible results of ecosystem restoration and rehabilitation implemented on the ground, in particular if national evaluations, e.g., mid-term progress reviews, and final reports are made available for the EPR purposes (but also in the situation when such reports are missing).

1.2. Pressures on species and ecosystems

As emphasized by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) “The human activities directly responsible for the rapid decline in ecosystem health and biological diversity are, in order of global importance, changes in land and sea use (e.g., conversion of forests to agriculture), direct exploitation of species (e.g., fishing, hunting, poaching, illegal wildlife and the timber trade), climate change, pollution and invasive species. Climate change is a risk multiplier that exacerbates the impact of the other drivers, with potentially devastating short-term impacts on coral reefs, tropical forests and Arctic ecosystems”. 17

Methodological remarks

The main objective of each pressures-related section of an EPR chapter on biodiversity and PAs is to turn the attention of decision-makers to threats for the preservation of biodiversity and natural ecosystems, in particular those resulting from the adverse effects of anthropogenic pressures on environment, either caused by the careless implementation of several other sectoral policies (e.g., those concerning mining, agriculture, forestry, urbanisation and infrastructure development) whenever the objectives of conservation and sustainable use of biodiversity are insufficiently integrated, or by the ineffective environmental law enforcement. Simultaneously, the conservation status of species and ecosystems declines as a result of phenomena and processes such as climate changes, which intensity and pace exceeds their natural adaptation capacity, while the ‘country response’ remains inadequate.

It should be noted that the impact of selected sectoral policies on environment (incl. biodiversity) is always thoroughly analysed under other separate thematic EPR chapters, followed by the assessment of related policies and their implementation, resulting in EPR recommendations to Governments. Hence, the role of EPR experts drafting a chapter on biodiversity and PAs is therefore limited to indicating pressures most threatening the integrity of natural ecosystems and the preservation of their biological diversity, while the thorough review and assessment of policies related to sectors other than nature conservation (e.g., industry, energy, transport, urbanization, agriculture, land management and spatial planning) is rather not part of their duties under EPR, while the formulation of resulting EPR recommendations to Governments could remain well beyond their professional capacities.

Last, but not least, all EPR experts are explicitly instructed that the number of recommendations addressed under their respective chapter should rather not exceed 5. In result, experts responsible for the EPR chapter on biodiversity and PAs address in their recommendations solely the most important and/or most urgent challenges directly related to biodiversity conservation and PAs system development and

17 IPBES/7/10/Add.1. https://ipbes.net/events/ipbes-7-plenary
management. Due to the above, among all 363 biodiversity-related recommendations addressed in the 40 reviewed EPR reports, only 14 concerned measures necessary to mitigate the adverse effects, and threats posed by different (mostly anthropogenic) pressures on environment (see sub-section 2.1).

To summarize, the pressures-related section of an EPR chapter on biodiversity and PAs can indicate problems which require an immediate and adequate ‘country response’, but will rather not indicate and recommend solutions, such are to be commonly identified, agreed upon, and implemented in cooperation by several relevant sectoral ministries and state agencies, as the successful ‘country response’ exceeds the competencies and capacities of authorities responsible for biodiversity and PAs.

Due to the above, this assessment can only indicate the reasons and intensity of different pressures on biodiversity and PAs in particular EPR countries (solely on the basis of their biodiversity-related 3EPR chapters, thus not necessarily presenting the current situation, as 3EPRs were published between 2014 and 2020), which would allow the general overview of the scale of challenges, and comparisons between countries, while the evaluation of the effectiveness (or the lack thereof) of inter-sectoral coordination towards the implementation of relevant different sectoral policies aimed at preventing and mitigating the adverse effects of such pressures should possibly be carried out under the coming 4th and next EPR cycles.

**Land uptake**

Land uptake pressure on natural ecosystems is explicitly referred to as a significant threat in almost all 3EPRs, except for the Republic of Moldova, and Serbia (its 3EPR did not contain a chapter on biodiversity, but Chapter 7 on water management mentioned unplanned urbanization in the basins of smaller watercourses).

3EPR of Albania mentioned land uptake resulting from urban sprawl, as well as sand and gravel mining of beaches and riverbeds, and transport infrastructure (highways) development. In Belarus the land uptake pressure is primarily linked with the draining and transformation of wetland habitats into agricultural land, construction of new roads, and the spatial expansion of settlements. In Bosnia and Herzegovina, the main factors were unplanned urbanisation, exploitation of mineral raw materials, and excessive erosion caused by deforestation and inadequate treatment of steep slopes. 3EPR of Bulgaria indicates the land uptake by agriculture, infrastructure development, but also the extraction of minerals (incl. illegal mining), quarrying, sand and gravel extraction from riverbeds. In Georgia some part of Kolkheti National Park (being also a Ramsar site) has been withdrawn and allocated for the construction of the Kulevi oil terminal, similarly part of Kazbegi PAs was allocated for the HPP construction. In Kazakhstan threats to natural ecosystems considerably increased due to land uptake resulting from the growing demand for pastures, the rapidly developing mineral resource extracting industrial sector (incl. offshore and shoreline oil and natural gas mining), and growing demand for land suitable for tourist and recreational infrastructure development in the ‘limited economic use’ zones of national parks. In Mongolia the growing demand for pastures and the rapid development of the mineral resource-extracting sector (both licensed and artisanal mining) followed by associated infrastructure development are the main factors increasing the land uptake pressure (resulting in conflicts concerning the enforcement of protective regimes of existing PAs and the further extension of the PA network). In Montenegro the uncontrolled urbanization, tourism and associated infrastructure development threaten the integrity of natural habitats. In Morocco the land uptake for agricultural purposes (also resulting in deforestation) is one of the main factors enhancing the transformation, degradation, and loss of natural habitats. In North Macedonia the main factors are the urbanization, transport infrastructure development and mineral resource extraction, while the adoption of the Law on Tourism Development Zones increased the demand for land suitable for tourism and recreational infrastructure development (also inside PAs). In draft 3EPR of Romania transport infrastructure development, urbanization (incl. illegal residential housing development) as well as rock, gravel and sand extraction (incl. from riverbeds and open pit) were mentioned. In Tajikistan the real challenge is the conversion of natural ecosystems into agricultural land (which affected Sari-Khosor nature park in 2003) and illegal construction of settlements inside PAs (the case of state nature reserve “Romit” in the 1990s).
In **Uzbekistan** the land uptake for agricultural purposes and urban development, transformed the natural ecosystems in some 18 per cent of the country’s territory into ‘anthropogenic zones’.

It should be noted that while the urbanization and infrastructural development will probably not significantly affect some EPR countries (e.g., Kazakhstan, Mongolia, Morocco, Tajikistan, Uzbekistan) in the foreseeable future, but the land uptake for agricultural and mining purposes is already a significant threat for their natural ecosystems.

Simultaneously, other EPR countries, stretching over much smaller territories and densely inhabited, have to cope with the whole multitude of factors increasing the demand for land.

Regardless the size of the country’s territory, probably most striking are the examples where the Governments are either not capable or simply not willing to prevent and mitigate the land uptake-related pressures inside PAs, hence areas encompassing the last comparatively well-preserved patches of ecosystems of the scientifically confirmed highest natural and conservation values, harbouring the last remains of biological diversity. Explaining the sound reasons for such failures and omissions to future generations would not be easy.

**Development of energy installations and infrastructure**

Pressures on natural ecosystems and biodiversity resulting from energy installation and infrastructure development were mentioned under several 3EPRs. According to the report concerning **Albania**, this country “*is the regional leader in the number of built and planned hydropower plants (HPPs)*”. However, despite that one fourth of 94 HPPs planned at the time of the 3EPR was expected to be built inside PAs (which will therefore have strong impact on PAs), no cumulative EIA of HPPs in the country, and in particular in PAs, has been undertaken. Several HPP projects resulted in local community protests, in 2017 one complaint on the presumed negative impact of HPP development on the Vjosa River was registered under the Bern Convention, and addressed under the European Parliament Resolution, which advised the Government to abandon the planned HPP, instead consider the designation of a national park in this area.

3EPR of **Bosnia and Herzegovina** also mentioned HPP pressure on riverine ecosystems. In case of **Bulgaria**, the report emphasized negative effects of HPPs but also of solar and wind energy installations, that affected some Natura 2000 sites. The above resulted in launching infringement procedures by the Standing Committee of the Bern Convention and by the EU (e.g., for Kaliakra and Balchik, both SPAs and IBAs) and finally in 2016 the European Court of Justice found the Government of Bulgaria guilty of the number of infringements of the EU law. The pressure of HPPs (some 900 new permits issued, over 100 HPPs operating in Natura 2000 sites) has been mitigated by restricting (under the amended Water Act) such new developments inside Natura 2000 sites. As already mentioned, in **Georgia** some parts of existing PAs were withdrawn for the construction of the oil terminal and the HPP, while newer HPPs were still planned. At the time of the 3EPR the impact of energy installations and infrastructure development in **Kazakhstan** was mainly limited to accidental bird mortality on high voltage power lines, but the planned construction of new HPPs could increase threats to the biodiversity of water and riverine ecosystems in the near future. In **Mongolia** this impact was also negligible, although a few existing small dams and HPPs impaired the upstream migration of fish species, but the planned development of wind farms can increase the mortality rate among birds. Construction of artificial water reservoirs in **North Macedonia** led to the destruction of rare flora species’ refugia, while the construction of new HPPs was still planned (also in existing PAs), which resulted in a case filed under the Bern Convention. Draft 3EPR of **Romania** mentions the impact of the large capacity Iron Gates HPP on fish species migrations along the Danube. In **Tajikistan** HPP dams had no fish elevators, which made such migrations not possible. In **Uzbekistan**, due to scarcity of water resources, the construction and operation of HPPs automatically alter the conditions for the water-dependent riverine and wetland ecosystems and species, while the planned construction of a nuclear power plant can irreversibly destroy part of the “Aydar-Arnasay Lakes System” Ramsar Site.

Despite that 3EPR of Belarus, Republic of Moldova, Montenegro, Morocco, and Serbia did not explicitly indicate and elaborate on the intensity of pressures resulting from energy installation and infrastructure...
development, potential threats for ecosystems and species might be similar to those confirmed in other reports.

**Habitat fragmentation and human-made barriers for migratory species**

Habitat fragmentation and adverse effects of man-made barriers restricting species migrations are the challenges common for the majority of the 3EPR countries. In **Albania** the main factor was the construction of the north–south and east–west highways, and general increase in road traffic. 3EPR of **Belarus** emphasized the effect of the development of modern forms of agriculture on wildlife migrations, in addition to the development of road infrastructure. The latter was also mentioned in 3EPR of **Bosnia and Herzegovina**. 3EPR Chapter 4 (on implementation of international agreements and commitments) mentions the case of the planned construction of a Struma motorway in **Bulgaria**, filed under the Bern Convention. In **Kazakhstan** the construction and operation of the Beyneu–Shalkar railway deterred the winter southward migration of the CR saiga antelope population of the Ustyurt herd into Uzbekistan, while illegal fencing of recreational land plots in limited economic use zones of national parks was an example of anthropogenic barriers to the free movement of species on the local scale. In the **Republic of Moldova**, the negative examples could be the construction of a railway dam crossing the Lower Prut Lakes Ramsar site, while dams on the Dniester and Prut Rivers continue to be barriers for fish species migration. In **Mongolia**, the habitats of threatened migratory ungulate species are fragmented (however only in few parts of the country) by linear infrastructure (roads and railways) development, where fenced railroads have similar effects on wildlife migrations like the border fence present at the state borders with China and the Russian Federation. EPR Chapter 7 (on water management) mentioned the ecological fragmentation of rivers in **Morocco** by hydraulic barriers (dams). 3EPR of **North Macedonia** elaborated on several transport infrastructure development projects potentially resulting in the fragmentation of habitats, intersecting wildlife migration routes, planned in ecologically sensitive and legally PAs, which in 2017 resulted in joint World Heritage Centre/ICOMOS/IUCN Reactive Monitoring mission, and filing the case under the Bern Convention. In **Romania** the development of highway and railway infrastructure results in habitat fragmentation. In case of **Tajikistan** its 3EPR mentioned fragmentation, degradation or destruction of habitats and landscape in the course of infrastructural investments, also in the context of larger HPPs (as previously mentioned, HPPs impair fish species migrations, as of late 2015, Tajikistan had 10 larger and 314 small HPPs, while 189 new were still planned). In **Uzbekistan** natural habitats were not highly fragmented in the predominant part of the territory, but fences along the state borders as well as concrete barriers set along roads (also separating lanes), coupled with linear agricultural technical infrastructure (e.g., elevated half-pipelines distributing water for irrigation purposes) in the densely populated easternmost part of the country could impede migrations of larger wild mammal species.

3EPRs of Georgia, Montenegro, and Serbia did not elaborate on this particular pressure.

**Logging and deforestation**

Due to the large loss of forest cover in the past 25 years (an estimated 20 per cent), in early 2016, **Albania** imposed a nationwide, 10-year moratorium on logging, with the exception of fuelwood used by local communities. In **Belarus** illegal logging is effectively controlled and supressed, but the intensification of forestry activities resulted in the transformation of almost 20 per cent of forests into plantations, which decreased the biodiversity of forest ecosystems. However, at the time of the 3EPR less than 60 per cent of the annual forest increment was harvested, forests in Belarus were well managed and not particularly threatened. Similarly, **Bosnia and Herzegovina** kept the annual allowable cut well below (69 per cent) the annual increment, however its 3EPR mentioned forest ecosystems degradation, resulting from mismanagement of deciduous forests as well as uncontrolled logging and clearcutting, while the deforestation and inadequate treatment of steep mountain slopes were among the main causes of land degradation in the country. Illegal logging was also a major problem in **Bulgaria**, while its forests were also affected by uncontrolled livestock grazing. Furthermore, the fragmentation of larger forest complexes affected the lowland and riparian forests, some of which became shrub formations, while most of the deciduous forests present in Bulgaria were transformed into coppice forests. In **Georgia**, where a
considerable part of both rural and urban population was heavily dependent on fuelwood, illegal logging (also for construction timber) slightly declined (according to official data), but forests remain exposed to excessive livestock grazing. Moreover, floodplain forests (which are also important fauna migration corridors) were severely degraded, as a result of arable land expansion and hydrological changes caused by the construction of artificial structures along the riverbanks. In Kazakhstan the illegal logging of saxaul forests is quite limited in volume and cannot be considered a serious threat (also due to the fact that saxaul forests and plantations cover only 2.3 per cent of the country’s territory). In the Republic of Moldova, the demand for fuelwood was, as of 2013, almost equal to the annual increment, and illegal logging was still a serious problem, while the law enforcement was ineffective. Fines for illegal cutting were lower than the price of permits for official forest harvesting. Riparian forests managed by local authorities and communities were intensively exploited. Illegal logging also remains one of the main problems of forest resource management in Mongolia, where firewood is the only available source of fuel for heating and cooking in many parts of the country. However, the negative effects have at least partly been mitigated by the application of the community-based forest management approach (contracting and licensing forest user groups). Due to limited resources, strengthening law enforcement to prevent illegal logging is hardly possible, as on average, a single forest ranger is responsible for the protection and maintenance of up to 100,000 ha of forest. Other important drivers for forest ecosystems degradation are forest fires, and minor pest damage. In order to mitigate deforestation, clear-cutting has been prohibited by the Law on Forests. 3EPR of Montenegro mentioned that the cumulative effect of different threats (incl. unsustainable and illegal use of natural resources) caused a reduction in the functionality and stability of natural ecosystems, particularly of forest and water. Its Chapter 5 (on implementation of international environmental agreements) reported that one third of 27 Important Plant Areas (IPAs) was threatened by deforestation and (intentional?) burning of vegetation. In Morocco the deforestation resulted from forest land clearance for agricultural purposes, while illegal timber harvesting and collection of firewood constituted a major problem, fundamentally driven by poverty. On the contrary, in North Macedonia pressures on species and ecosystems from forestry operations and illegal logging was insignificant, and the total area of forests in the country slightly increased, due to natural forest succession to post-agricultural land. According to the draft 3EPR of Romania, the second NFI (2014–2017) indicated that illegal logging significantly intensified, more than doubled when compared to the results of the first NFI (2008–2012). Over 53 per cent of timber harvested each year in Romania was illegally logged, mostly in privately-owned forests.

The 3EPR of Serbia reported on significantly increased forest felling (by 26.1 per cent), and forest damage (by 66.7 per cent), including intensified illegal logging, and forest fires. However, most striking was the deforestation trend in Tajikistan, where forests are exposed to extensive livestock grazing, illegal logging for fuelwood and firewood collection, and where the annual rate of deforestation caused by both above pressures exceeded the natural forest biomass increment and natural forest regeneration ability. In Uzbekistan deforestation processes were ongoing mostly in sub-montane and mountainous regions, predominantly caused by the excessive and uncontrolled livestock grazing, while the scope of illegal forest felling for firewood and construction timber could not be assessed due to the unavailability of data. Moreover, sub-montane and montane forests were affected by wrongly planned agricultural and infrastructural developments, while riparian tugai forest ecosystems were seriously threatened by adversely changing hydrological regimes.

Acidification

According to 3EPR, no data on the impact of acid rain on species and ecosystems was available for Albania, however the European Environment Agency (EEA) study of exposure of ecosystems to acidification indicated that Albania was not exposed to the effect of acidification at all, mostly due to scarcity of industrial plants, also in neighbouring countries. 3EPR of Bulgaria reported that in case of forest ecosystems the national maximum permitted levels of acidity, sulphur and nitrogen were not reached between 2009 and 2013. According to 3EPR Chapter 9 (on agriculture and environment) the use of acidic nitrous fertilizers in Georgia resulted in acidification of 11 per cent of the land, but no information on the impact on ecosystems was provided. In Mongolia the acidification of rivers, underground water and soil occurred mostly in regions where illegal gold mining operations were conducted. In 2012 North Macedonia
adopted a national plan and a programme towards the reduction of air pollution, but no information on the possible impacts of acidification on ecosystems and biodiversity was provided. In several forests of Romania airborne industrial pollution (both domestic and transboundary) and acid rains affected the tree health condition and their natural regeneration ability. Thermal power plants (TPPs) in Tajikistan mainly use coal, which environmental impacts include air emissions causing the acidification of the environment, incl. the contamination of rivers and lakes. However, no information on the acidification of natural ecosystems was provided in 3EPR of Tajikistan.

3EPRs of Belarus, Bosnia and Herzegovina, Kazakhstan, Republic of Moldova, Montenegro, Morocco, Serbia, and Uzbekistan did not elaborate on the impact of acidification on ecosystems and biodiversity.

**Eutrophication**

According to 3EPR of Albania, significant eutrophication of waters occurred in the 3 transboundary lakes (Prespa, Ohrid and Shkodra/Skad ar, the first two shared with North Macedonia, the last shared with Montenegro) and also in some sections of the coastal zone, due to the inflow of untreated wastewater and sewage, and agricultural runoff. In Belarus the use and improper storage of fertilizers (incl. manure) and the wastewater discharge from the large-scale industrial livestock (e.g., pig) breeding farms are the main sources of surface and groundwater pollution with biogenic elements, but the 2014 Water Code even weakened the water protection zones regime. In Bosnia and Herzegovina only some water bodies occasionally showed eutrophication symptoms. In Bulgaria this problem has been solved for the Srebarna Lake area (part of World Heritage property, and a Ramsar site), but the littoral zones of the Black Sea were still affected, while the significant increase of nitrogen fertilizers could also increase the water pollution in rural areas, like in the Republic of Moldova, Romania, and Serbia. No data on the eutrophication impact were available for Georgia, except for the Black Sea littoral zone, where this phenomenon was caused by the discharge of untreated wastewater. In Kazakhstan, Mongolia, and Uzbekistan (probably also in North Macedonia) the main source of eutrophication was the uncontrolled livestock husbandry waste discharge into watercourses, particularly challenging was the situation in Uzbekistan (due to the general scarcity of water resources in the country), and at the Kazakh coast of the landlocked Caspian Sea, which receives most of its input from the Volga, Ural, Irtsh and other rivers (carrying nutrients), but has no outlet. In Morocco the high level of nitrates was confirmed in surface waters, artificial water reservoirs, and groundwaters of agricultural (mostly irrigated) zones, according to the chapter on biodiversity the changes in the quality and quantity of water resources were one of the two most significant threats. In Tajikistan aquatic ecosystems in more densely populated regions were affected by the uncontrolled discharge of untreated wastewaters.

**Desertification**

Land degradation as a result of soil erosion triggered by the decline or loss of vegetal cover, caused by unsustainable agricultural (e.g., overgrazing of pastures, excessive drainage of wetlands) and forestry practices (e.g., deforestation) is a common problem in several 3EPR countries, but a more evident desertification process occurs in countries which, due to their natural environmental conditions, are partly covered by desert and steppe ecosystems (up to some 90 per cent in Kazakhstan, some 87 in Mongolia, and 85 in Uzbekistan). For instance, the total percentage of the territory of Mongolia affected by desertification has grown from 72 per cent in 2006 to 77.8 per cent in 2010, with a slight reduction to 76.8 per cent by 2015. However, the most striking example is the Aral Sea region (shared by Kazakhstan and Uzbekistan) where almost the entire marine ecosystem and a large part of coastal and wetland ecosystems were gradually replaced by the sandy-salty desert ecosystem (the so-called Aralkum Desert, of more than 5.5 million ha, including over 3.3. million ha in Uzbekistan). In Tajikistan some 82.3 per cent of the country’s territory and 97.9 per cent of its agricultural land suffered from erosion, while desertification was most visible in the country’s southern desert and semi-desert region. Also, Morocco was severely affected by desertification, where each year some 4,000 ha of productive land was lost and some 30,000 ha was invaded by the desert (causing the disappearance of hundreds of oases), while over 23 million ha was affected by erosion.
As for the European 3EPR countries, according to 3EPR of Albania some 24 per cent of land was highly threatened by desertification, due to soil erosion and loss of vegetal cover, while a loss of arable land could be disastrous to the economy of the country where agriculture at that time accounted for one fifth of its GDP and, although decreasing, almost half of total employment. 3EPR of Georgia mentioned the desertification of winter pastures. In the Republic of Moldova some 40 per cent of land was affected by soil erosion, including some 112,000 ha facing the risk of desertification. In Romania almost 30 per cent of the country’s territory (incl. 20 per cent of the total arable land) faces the risk of desertification.

The scale of desertification threat was not yet determined in 3EPRs of Belarus, Bosnia and Herzegovina, Bulgaria, Montenegro, North Macedonia, and Serbia.

**Intensified agriculture**

The adverse effects of intensified agriculture on ecosystems and their biological diversity are common for all 3EPR countries. In Albania the overgrazing of pastures and the cultivation on mountain slopes increases the intensity of soil erosion and land degradation, the agricultural pressure in the past resulted in the drainage (hence destruction) of wetlands, deforestation, and damages to subalpine and alpine pastures. In Belarus the species-rich traditional farming systems were replaced by intensified agriculture and monocultures. Furthermore, as of 2013, the area of 2.9 million ha has been drained for agricultural purposes, groundwaters were excessively used for supplying industrial livestock breeding and poultry farming with water, while wastewater was discharged into surface waters, additionally polluted by fertilizer-rich agricultural runoff. A specific situation occurred in Bosnia and Herzegovina, where the intensification of agricultural production in some regions somehow compensated the post-war abandonment of other rural areas, which resulted in the discontinuation of traditional agricultural practices (mowing and grazing, allowing for the maintenance of open meadows and pastures), followed by the loss of semi-natural habitats and their biodiversity as a result of the secondary forest succession. 3EPR of Bulgaria reported on the intensification of land use (leading to the loss of local breeds and plant varieties, as well as increased fertilizer runoff) and the conversion of grasslands into arable land (causing destruction of the meadow and steppe vegetation), but also on the negative results of rural areas abandonment. In 3EPR of Georgia the overgrazing of pastures and forests, ploughing of steep slopes, and draining of wetlands were mentioned. In Kazakhstan the main pressures result from the growing demand for new pastures (enhanced by the ongoing degradation of pastures overgrazed by constantly increasing livestock populations) and the uncontrolled livestock husbandry waste discharge into watercourses. According to 3EPR of the Republic of Moldova, “intensive agriculture has pushed the ecological integrity of steppe habitat to its limits”, only some 2 per cent of the country’s grassland ecosystem was still covered by natural or semi-natural habitats (although largely fragmented), which threatened the preservation of the gene pool of steppe plant communities. Furthermore, the intensive use of fertilizers, drainage of wetlands, and unsustainable grazing were reported. In Mongolia the rapid growth of livestock numbers has been noted, while the growing demand for cashmere resulted in altered species structure of herds, causing the massive deterioration and loss of natural habitats, due to pasture overgrazing, and destruction of the upper soil layer and root parts of grass vegetation by goats. Moreover, livestock grazing on young seedlings in forest ecosystems prevents the natural forest regeneration, although no studies on this subject and no statistical data were available. Nitrate pollution from agricultural sources was reported in 3EPR of Montenegro.

In Morocco the agricultural pressure is responsible for the loss, change and degradation of natural habitats, including the uncontrolled use of and pollution from phosphates and nitrates. The intensification of agricultural practices in North Macedonia resulted in reduced water quantity and quality in lakes and rivers, and pollution of groundwaters with chemical plant protection products and livestock husbandry waste discharge, while the abandonment of traditional agricultural and land use practices as a result of rural area depopulation affected the state of the previously managed grassland habitats, and their plant communities. In Romania, where some 400,000 hectares of wetland habitats were drained, converted to agricultural use, and thus lost already in 1980s, some areas inside Natura 2000 sites have been recovered into the natural wetland state under EU-funded projects, but in other areas the drainage of wet meadows and changing
such into arable land or grazing meadows were still practiced and even supported by the Environment Fund. Overgrazing of pastures and ploughing of natural grasslands for the expansion of arable land caused their further deterioration, some remotely located grasslands were abandoned and thus exposed to forest succession, while in some other areas the remaining grassland and steppe habitats, considered by the authorities as “degraded” land, were intentionally afforested. In some regions (e.g., Dobrogea or Bărăgan) monocultures and intensive agricultural activities still prevailed, with a negative impact on species diversity. As already mentioned, agricultural fertilizers runoff affected the quality of aquatic ecosystems in Serbia. In Tajikistan the changes in agricultural practices resulted in the loss of natural habitats, numerous landraces and their wild relatives, while the uncontrolled livestock grazing not only caused the deterioration of pastures, but also prevented the natural forest regeneration and contributed to the extinction of wild plant species. In Uzbekistan unsustainable farming and animal husbandry practices had the strongest impact on the natural ecosystems, habitats and wild flora and fauna species, also as a result of deficit water withdrawal for agricultural irrigation, uncontrolled animal husbandry waste discharges, damages to forest ecosystems resulting in deforestation, and pastureland degradation caused by overgrazing. The above caused the disappearance of several rare and endemic plant species, the transformation of grassland communities species composition, and the infection of wildlife species (incl. globally threatened ones) with ecto- and endoparasites.

**Hunting and fishing**

The level of pressures on species caused by hunting, fishing, and poaching differs between 3EPR countries.

In two EPR countries both licensed hunting and poaching adversely affected the populations of not only the game but also of the globally rare and threatened species, formally declared as protected by the national legislation. Most striking was the example of Tajikistan, where the 2014 Law on Hunting and the Hunting Sector classified some Red Book animal species categorized as “threatened by extinction” (but particularly attractive for commercial trophy hunting, up to US$50,000 per head) as game animals of the “limited species” group, which legitimised hunting on these protected fauna species (explicitly forbidden by the 2008 Law on Fauna and the 2011 Law on Environmental Protection, both remaining in force in parallel to the above 2014 Law), also inside PAs. It should also be emphasized that the determination of hunting quota was based on rough estimates, as in the absence of biodiversity monitoring the reliable information on the actual size of wild fauna and wild flora species populations is quite limited. Furthermore, data used for setting the hunting quotas for Red Book species were not publicly available, same as data on poaching, illegal trophy hunting, and illegal fishing, which all remain the main threats to the survival of several animal species in Tajikistan. Another negative example could be Georgia, which 3EPR mentioned the amendments to legislation adopted in 2010 and 2012, which allowed hunting also inside PAs (except for national parks) and in an implicit way authorized commercial hunting of species included in the Red List, while poaching (e.g., illegal fishing) further exacerbated threats to species survival.

In some other countries the limited operational capacities of field services did not allow for the effective nature conservancy law enforcement. In Albania poaching was a major threat for the preservation of species, in particular of carnivorous mammals and migratory birds, whereas the positive effects of the moratorium on hunting imposed for the 2014–2021 period cannot yet be assessed. 3EPR of Bosnia and Herzegovina noted the decrease in poaching, but also on the absence of legal provisions and protective measures concerning the monitoring, prevention and mitigation of poaching of wild bird species. As for licensed hunting, it should be emphasized with concern, that there was no hunting season defined for several game species, which could largely hamper the natural reproduction of game species. In the Republic of Moldova, the number of recorded incidents of illegal fishing continuously increased in 2011–2017 (by 72.25 per cent). 3EPR emphasized poaching on migratory bird species. In Morocco both hunting and poaching was still carried out also in several PAs. Moreover, hunters were not required to complete a training which will allow them to identify and distinguish legally protected from game species. 6CBD NR by Serbia noted the illegal wild bird shooting practice, affecting also the protected and strictly protected bird species. In Uzbekistan the populations of several game mammal species were growing, even despite poaching, so that the annual hunting quota could be adjusted accordingly and effectively used. However,
the hunting policy was less consequent concerning bird species, as e.g., despite the 20 per cent decrease in population of the chukar partridge the use of its annual hunting quota more than doubled, which means that an adequate ‘country response’ was missing. Moreover, according to 3EPR, poaching was one of the reasons for the decline in populations of some 69 per cent of game mammal species, as well as 56 per cent of rare and threatened protected mammal species occurring in the country. 3EPRs of Bulgaria and Montenegro also mentioned poaching among threats for species.

In few other countries the lack of credible data on species populations, and in particular on the number of poached individuals of particular species did not allow to assess the level of threat caused by hunting, fishing and poaching. In Mongolia hunting was well regulated, but in the absence of data on the recent game population trends (the last national wildlife census was conducted in 2010) the sustainability of hunting and fishing quota cannot be assessed, while some threatened species were locally threatened by poaching, and the 2019 VNR indicated the growing trend in poaching. In North Macedonia the absence of the national biodiversity monitoring system resulting in the general lack of data on fauna species did not allow to assess the scale of poaching and illegal trade in protected species.

In Romania poaching was still common also inside Natura 2000 sites, same as poaching on fish species (including by ‘electric fishing’ method) along the Danube and other rivers, however no data were available on the scope of such illegal activities, and on the population numbers and trends of species widespread in the country.

Only in two 3EPR countries poaching was well controlled, while the annual hunting quotas were set at the sustainable level. In Belarus the official statistics indicated a decline in the number of poaching and illegal fishing cases over the 3EPR reporting period, however the above activities still remained widespread. As for licensed hunting, even the lowered quota did not prevent the decline in population of several bird species (e.g., grouse and capercaillie). It should also be explained, that the limited licensed hunting for the European bison (mentioned under the “hunting tourism” sub-section of the 3EPR, which noted the fees beginning from €10,000) which is a strictly protected species in Belarus, successfully preserved from extinction (Belarus harbours its world’s second largest population) was allowed only in exceptional cases (always requiring the special permission by the Ministry of Natural Resources and Environmental Protection), justified by the need to select and eliminate defective specimens, while the size of several local sub-populations of this species already exceeded the habitat carrying capacity. In Kazakhstan, both hunting and poaching were well controlled, the annual hunting quotas were kept at a reasonable level, allowing not only for the regeneration of wildlife populations, but also for their continuous increase in numbers (regardless of poaching on several species). The Government imposed a moratorium on hunting critically endangered saiga antelope, while some other threatened game fauna species were either not hunted at all, or the allowed quotas were kept well below the maximum acceptable rate.

Collection of non-timber forest products

It should be noted that e.g., game species of the forest habitats are also categorized as non-timber forest products (NTFPs), but pressures related to their legal or illegal harvesting have already been described above (under “hunting and fishing”).

According to 3EPR of Belarus chapter 10 (on forestry and environment) NTFPs collection was a traditional and commonly practiced activity, as well as an important source of rural income, but was not mentioned among pressures on biodiversity, and no related regulations or control mechanisms were described. Illegal collection of herbs and fungi continued also in Bulgaria, where NTFPs collection was well regulated, organized and controlled. Also, in Kazakhstan and Mongolia the NTFPs collection was not yet considered an important threat to biodiversity.

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On the contrary, according to 3EPR of Albania, the NTFPs collection, which is an important economic activity for local communities significantly increased in 2011–2017 (by 85 per cent), but the quotas for e.g., sustainable harvesting of medicinal plants were not specified, in result these activities were neither regulated nor controlled, which could affect populations of several species in particularly overharvested areas. Extensive, unsustainable, poorly or non-regulated, and uncontrolled collection of wild plants and fungi species (incl. threatened species) were considered to pose a serious pressure in Bosnia and Herzegovina and Georgia. In North Macedonia several species were threatened by illegal collection (including regionally endemic ones), despite the moratoria imposed on their harvesting. In Tajikistan, although some 22 medicinal plant species were cultivated in special forestry farms in order to mitigate the pressure on their taking from the natural stands, at least two rare plant species included in the Red Book were brought to extinction. In Uzbekistan the specialized state forestry enterprises and concessionary private companies obey the annual quotas set for NTFPs harvesting, but such activities undertaken by local communities for subsistence purposes and trade were practically uncontrolled.

In the case of other 3EPR countries, information on NTFP related issues was either incomplete or missing. The 3EPR of the Republic of Moldova reported on harvesting NTFPs by the forestry Agency “Moldsilva” and its subordinated enterprises in accordance with the quotas set by the Botanical Institute and the Forest Research and Management Institute; however, it did not elaborate on the collection of NTFPs by the local communities. 3EPR of Montenegro mentioned fees for collection of wild berries, herbs and mushrooms as a source of revenue for national parks, but did not elaborate on the NTFPs related pressures, neither inside nor outside PAs. In Romania the official statistics for 2012–2018 indicated a general decreasing trend in the quantity of harvested NTFPs, but no studies on the related impact on biodiversity and ecosystems were available, and thus no pressures were indicated. 3EPR of Morocco mentioned the illegal collection of oils in endemic Argania forests, but pressures on harvesting other NTFPs were not mentioned. There was no information on NTFP collection and resulting pressures in 3EPR of Serbia, where separate chapters on either biodiversity or forestry were absent.

Tourism and leisure

It should be noted that such pressures are not limited to e.g., physical damages of the soil and vegetation cover caused by trampling by visitors walking off the marked trails or diving off-road, or the disturbance of resident wild fauna species. Much more damaging are the loss of habitats caused by land uptake for tourist and recreational infrastructure as well as accompanying (e.g., transport) infrastructure development, unregulated or inefficient waste disposal, or untreated wastewater discharges into water bodies. However, most striking were cases (intentionally not explicitly indicated here) of sites potentially most attractive for tourist infrastructure development, but located inside existing PAs, hence restricted and non-available for construction, were destroyed (e.g., intentionally burnt down) to allow the de-gazetting of the natural values of the site, and in consequence its withdrawal from the PA, and abolishment of construction restrictions. Fortunately, such cases were no longer reported under 3EPRs.

Different pressures on biodiversity resulting from tourism and leisure are likely to increase in the coming years, following the continuous growth in the tourism and recreation sector, but also as a result of the COVID-19 pandemics (see also sub-section 4.2.4), which additionally amplified the recent trends in tourism, favouring outdoor tourism and recreation in green spaces, rural landscapes, and in particular inside PAs (so far best preserved, but most ecologically sensitive).

However, in several reviewed countries tourism-related pressures were explicitly referred to already in their 3EPRs. The adverse impact of tourism on coastal and marine areas was evident in Albania, Bosnia and Herzegovina, Bulgaria, Montenegro, Morocco, and Romania, as well as on coastal and aquatic ecosystems of transboundary Lake Ohrid (shared by Albania and North Macedonia). The integrity of mountain ecosystems and PAs were threatened by tourist infrastructure (incl. ski lifts and ski resorts) development in Bulgaria, Kazakhstan (where tourist visitation pressure was still relatively low, except for PAs located in the near vicinity of larger cities), and North Macedonia (where the 2012 Law on Tourism Development Zones additionally increased the demand for land suitable for tourism and recreational infrastructure
development in PAs). Pressure on the construction of seasonal facilities in mountain regions was also noted in Romania. 3EPR of Montenegro reported that tourism and recreation were the dominant land uses at 81 per cent of IPAs, and that over 50 per cent of IPAs were threatened specifically by tourist development. In Tajikistan the adverse effect of tourism on biodiversity results from the commercial trophy hunting by foreign citizens, also on threatened Red Book listed species (either authorized or illegal). In Uzbekistan the growing trend in domestic tourism increased the visitation in some more accessible mountain PAs, resulting in the growing demand for the development of recreational and tourist facilities and infrastructure, while the uncontrolled visitation of the Chatkal Ridge caused the decrease in the Egyptian vulture population.

The 3EPR of Belarus (which had a separate chapter on tourism and environment) contains table 11.11, listing all major potential environmental risks from tourism, although no information on pressures from tourism and tourist infrastructure on the environment in the country was available for the review purposes, except for the data on the visitation of some PAs exceeding the allowable recreational pressure by 1.5 to three times. Similarly, little or no information was available on pressures from tourism and tourist infrastructure on the environment in Georgia, where several projects on eco-tourism and sustainable tourism development in PAs were implemented. In Mongolia tourism was generally not yet a serious threat to biodiversity, as the tourist traffic to PAs was effectively channelled and managed. However, the negative effects of impact from tourist vehicles, the growing amount of solid waste and wastewater, and the aesthetic pollution of landscapes was reported.

In the Republic of Moldova tourism was perceived rather as an opportunity for development (e.g., in Orhei National Park) and diversification of the regional economy than a potential pressure. Surprisingly, the 3EPR sub-section on “Tourism” described the variability of precipitation and the impact of climate change on ecosystems and biodiversity, while tourism-related pressures were described under “Collection of non-wood forest products” heading.

No information on tourism and leisure related pressures on biodiversity was provided in the 3EPRs of Serbia.

**Climate change**

It should be noted that two thirds (10 out of 15) of the 3EPRs contained a separate chapter concerning climate change, while in 3 other EPRs (of Georgia, Mongolia, and Tajikistan) climate change related issues could be elaborated under a separate chapter concerning risk management of natural and technological/anthropogenic hazards. Hence, such separate chapters were absent only in 3EPRs of Belarus and Morocco.

As previously emphasized, ongoing climate changes pose a threat to natural ecosystems (in particular wetland, and mountain ecosystems), as well as contribute to the loss of habitats and refuges of certain species (in particular boreal, endemic and glacial relict species), either cause or largely influence and enhance the intensity several other pressures (e.g., agricultural land uptake, soil erosion, land and water resources degradation, desertification, eutrophication) and exacerbate the adverse effects of other, man-made pressures and damages (e.g., deforestation). In general, climate changes affect the ecosystems and their biodiversity in all 3EPR countries in a similar way, however the intensity of impacts differs among the countries, which is well demonstrated in 3EPR reports.

In case of Albania its 3EPR mentioned that climate change has “an effect on biodiversity loss, at the level of ecosystems, species, genetic diversity within species and ecological interactions” in the country, but did not further elaborate on such, or provided examples. Also, for Georgia no specific climate change-related threats to biodiversity were mentioned, however the desertification of winter pastures must have an effect on mountain ecosystems. The 3EPR of the Republic of Moldova listed several possible climate change impacts on biodiversity and described possible scenarios but did not refer to any specific examples of damages which occurred within the reporting period.
In Belarus the reduction in habitat for boreal plant and animal species, and a decrease in population numbers of some species of wild plants and animals of riverine, riparian and wetland ecosystems were noted, while some new species typical of southern steppe and forest-stepped zones appeared. Furthermore, the changes in the distribution ranges of some forest-forming tree species, mass drying of spruce forests, and the degradation of floodplain oak forests were observed, resulting from changes in hydrological regime. The 3EPR of Bosnia and Herzegovina mentioned increased frequency of forest fires and floods, and adverse effects of climate changes on habitats of mountain regions (in particular relict-refugial high mountain landscapes) and karst landscapes (incl. wetlands of karst fields), as well as drying of some coniferous tree species specimens. In Bulgaria the decrease in population numbers of wintering bird species, the increase in IAS and forest fires, and the upwards shift of the upper boundary of the deciduous mountain forests could be associated with climate changes. In Montenegro the adverse effects were manifested by the shift of vegetation zones in the mountain regions, reduced productivity of ecosystems resulting in decrease of species diversity, drying out of forests and increased threat of forest fires. In North Macedonia the effects of climate change are expected to reduce the size of habitats of rare and endangered plant species and communities (in particular subalpine and alpine), while the thermophilous oak forests and shrublands characterized by high diversity and/or the presence of species characteristic of Mediterranean coastal forests and maquis biome were increasingly threatened by forest fires. The 3EPR of Romania mentioned e.g., increasing threats to wetlands, high mountain lakes, rivers and streams, marine and freshwater aquatic ecosystems. In Serbia the climate changes resulted e.g., in increased frequency of forest fires, changes in the species composition of certain forest communities, and reduced ability to maintain biological diversity.

The 3EPR of Morocco emphasized the general water shortages, further exacerbated by recurrent droughts, with adverse effects on the state of numerous (in particular oases) ecosystems and their species diversity, but did not explicitly indicate any particular example, as the limited water resources are not a new challenge to this country, encompassing large arid areas and partly covered by deserts.

However, most alerting were the adverse effects of climate changes in:

- **Kazakhstan**, where both coniferous and deciduous (e.g., river valley riparian tugai) forest ecosystems as well as steppe and grassland ecosystems were heavily affected, the threat of steppe and forest fires significantly increased, all aquatic, coastal and marsh ecosystems experienced significant periodic fluctuations in water level and salinity, important lake ecosystems continued to disappear, while drying of surface water points resulted in the degradation and loss of habitats of amphibians and waterfowl;
- **Mongolia**, mostly due to habitat degradation, increased threat of steppe and forest fires (which are fatal to ungulate, rodent and bird populations), and increasing scarcity of water sources, critically important for the survival of both resident and migratory wildlife populations, leading to competition for water with the local people and their livestock. Climate changes resulted also in increased frequency of the dzud winter weather anomaly occurrence, threatening the survival of both livestock and wild herbivorous mammal populations;
- **Tajikistan**, where almost all ecosystems were affected by recently prolonged droughts and severe cold winters, due to which, according to the World Bank, Tajikistan was ranked highest among European and Central Asian countries in terms of vulnerability, and the least able to adapt to climate change;
- **Uzbekistan**, which faced the large-scale ecological disaster in the former Aral Sea region (previously described under “desertification” heading), decrease in aquatic, floodplain, wetland and riparian forest habitats, increased threats for mountain forest and steppe ecosystems, and competition for water sources between wildlife populations, local people and livestock.

**Use of GMOs**

No cases of the use of genetically modified organisms (GMOs) or living modified organisms (LMOs) which could have potential adverse environmental impacts, i.e., could affect the state of biological diversity, ecosystems, habitats or species have so far been reported in EPRs.
Although all 3EPR countries are Parties to the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, some adopted related legislation and e.g., imposed ban on the GMO/LMO importation, release, cultivation or use, their potential impact remains indeterminate, mostly due to the lack of adequate research and monitoring. Hence, neither research results nor evidence of the potential adverse effects of GMO/LMO release on the native ecosystems and species are available.

Due to the above, it is recommended that this particular EPR sub-section is either no longer required or kept (for the reasons of the precautionary approach) but supplemented by the IAS component, which should therefore be moved from the part of the biodiversity chapter concerning the natural ecosystems and their native species composition to this part of the chapter, concerning threats and pressures on species and ecosystems.

1.3. Performance and gaps in biodiversity and forests monitoring networks

It should be noted that the vast majority of the 3EPRs (only except for Belarus and Georgia) contained a separate chapter concerning environmental monitoring (usually also describing information, public participation, and education issues), including the monitoring of biodiversity and forest ecosystems.

Due to the above, monitoring-related sections of EPR chapters on biodiversity and PAs and on forestry (the latter was present as a separate chapter in the 3EPRs of Belarus, Bosnia and Herzegovina, Georgia, and Mongolia) partly overlap with the chapter on monitoring, and should focus on detailed evaluation of the effectiveness of biodiversity and forestry monitoring policies, verify the presence and complexity of related databases, the overall operability and accessibility of the information systems for the relevant state agencies and scientific institutions.

In most 3EPR countries biodiversity and forest ecosystem monitoring is carried out, but the coherent national monitoring and biodiversity information systems are still missing.

Albania progressed with the establishment of the legal and institutional framework for monitoring and reporting on biodiversity and forestry, however some overlaps in monitoring responsibilities occurred, while the implementation was hampered by the financial shortages, it should also be noted that the monitoring of forest ecosystems is mostly focused on the qualitative overview of forest health status, while forest biodiversity component was almost missing. As for regular biodiversity and ecosystem monitoring, it was basically limited to only 76 sites selected in the whole country (including PAs, which results in the above-mentioned responsibility overlaps), while the limited funding allowed for carrying out the monitoring activities in no more than 15 to 20 locations per year. At the time of the 3EPR, the new NFI was in preparation, expected to be finalized in January 2019 (which can therefore be verified under the fourth EPR cycle).

At the time of the 3EPR, the National Agency of Protected Areas (NAPA) of Albania was responsible for the monitoring of flora and fauna inside PAs, while the National Environment Agency (NEA) was responsible for environmental monitoring in the remaining areas. 3EPR Recommendation 9.1 suggested that the Ministry of Tourism and Environment should clarify the NEA and NAPA mandates in terms of the locations and parameters for the monitoring of biodiversity inside PAs.

According to 2020 self-assessment by Albania, the above recommendation has been implemented (although no further explanations were provided), and the new organigram and structure were approved for NEA in July 2020.

Belarus is the only country where none of its previous EPRs recommended improvements in its monitoring system. According to the 3EPR, its biodiversity monitoring system was part of the National Environmental Monitoring System (NEMS) established in 1993, which ensured the availability of collected data to all governmental levels. Monitoring activities were carried out by specialized enterprises subordinate to sectoral ministries (e.g., forest monitoring) or state research institutions of the National Academy of
Sciences (e.g., monitoring of flora and fauna). Forest monitoring fed the State Forest Cadastre with data collected from 1,450 permanent registration points and 80 permanent sample plots. The integrated monitoring of ecosystems and biodiversity was carried out in 35 PAs, with 929 monitoring plots for forests and flora species, and 368 for fauna species. Furthermore, since 2011 the IAS monitoring system was in operation, based on over 70 permanent observation points (as of early 2015). Results of monitoring activities and field inventories were accumulated in several databases and data repositories (state cadastres), separately for flora, fauna, forests, and most harmful invasive species.

The 3EPR of Bosnia and Herzegovina reported that no biodiversity monitoring system was in place, and no institution was appointed for this task. In result, no organized system for the collection, storage, processing and analysis of biodiversity data existed, and available data collected on ad hoc basis was scarce, fragmented and often outdated. As for the forests, data collected by the public forest enterprises was quite limited, informing on the current forest area and growing stock, while the NFI has been last conducted in 2006–2009. However, the FBiH was developing an integrated information system for forest management, and the Information Systems for Nature Conservation were recently established at the entity level, while the CHM Biodiversity portal of Bosnia and Herzegovina was (as of late 2020) under re-design and operationalization. The CHM will include recently collected data concerning the planned Natura 2000 sites and species. The progress should possibly be assessed under the fourth EPR cycle.

The National Biodiversity Monitoring System of Bulgaria has been established already in 2004–2006 (as part of the National System for Environmental Monitoring, NSEM), considerably updated and upgraded in 2016. It provided information on the state of biodiversity on a genetic, species (e.g., plants, mosses, fungi, invertebrate animals, fish, amphibians, reptiles, mammals and birds) and habitat level, covering the main ecosystems of the country, subject to reporting under the EU Habitats and Birds Directives. The biodiversity monitoring national and regional database (BIOMON) included data on 972 species and 115 habitat types, collected through 92 different electronic reporting templates from over 20,000 monitoring sites, tracks and sample study areas. However, due to the limited availability of funding, monitoring of species important from the national perspective but not required by the EU was much less advanced. The National Programme for Forest Ecosystems Monitoring (also part of NSEM) is based on the well-designed network of permanent sampling plots.

At the time of the 3EPR the biodiversity monitoring in Georgia was basically limited to PAs, still insufficient, and mostly conducted ad hoc by university research departments and NGOs, on project basis. The above was partly due to the lack of funding, non-availability of skilled or trained staff, and non-attractive low salaries (resulting in vacancies for natural resources experts and rangers in PAs). Although each PA carried out monitoring activities on regular basis, the methods for data collection did not comply with modern scientific approaches, and a modern unified methodology was missing. Monitoring of forest ecosystems faced the same challenges, in result data and assessments on the status of forests were incomplete and fragmented, while the last NFI was completed in 1997. However, in response to 3EPR Recommendation 11.1, most recently Georgia launched the works on its new NFI, which was expected to be finalized in 2021. According to the 2020 self-assessment by Georgia, “the System for biodiversity monitoring will be integrated with the Forest Information Monitoring System (FIMS), where raw data and other information will be stored for agencies and the general public accordingly”. As of May 2021, the CHM of Georgia was not yet operational, the progress should possibly be assessed under the fourth EPR cycle.

In Kazakhstan neither the national biodiversity monitoring system, which could provide comprehensive and regularly updated information on the current state of ecosystems and habitats and trends in populations of species of flora and fauna, nor the state monitoring programmes on e.g., rare and threatened plant species were available. Most complex biodiversity monitoring was carried out on a regular basis (involving the use of modern techniques, e.g., telemetry, photo-traps, radio tracking, aircraft and drones) only in PAs, in particular those of republican significance and legal entity status, which employ research staff. However, at the time of the 3EPR such PAs encompassed only 2.58 per cent of the country’s territory. Moreover, not all data regularly collected in PAs was stored and available in digital format. Several academic institutions
and environmental NGOs conducted field research and nature inventory works on selected priority species and ecosystems, but on a short- and medium-term project basis. Due to recent (2017) changes concerning the state funding of scientific institutions, research and monitoring projects, several research programmes have been suspended or abandoned. The Republican State Enterprise “Kazakh Forest Inventory Enterprise” carried out forest monitoring and reported to the Committee on Forestry and Fauna. However, the monitoring of forests was mainly focused on the forest’s health status and reproduction potential, not the biodiversity of forest ecosystems. Last, but not least, monitoring activities conducted by forestry authorities was limited to the state forest fund lands, accounting for only 10.8 per cent of the country’s territory, partially overlapping with the PA network. In result, no regular biodiversity monitoring was carried out in the remaining, prevailing part of the country.

At the time of the 3EPR also the Republic of Moldova had no national monitoring system for biodiversity. Some research activities were undertaken by specialized institutes of the Academy of Sciences, and state universities, but mostly on ad hoc project basis. Forest monitoring activities carried out by the Agency “Moldsilva”, not particularly biodiversity-focused, are spatially limited to only 11 per cent of the country’s territory. In result, data on biodiversity of the Republic of Moldova was largely missing. The NFI was also missing at the time of the 3EPR (the reason for addressing Recommendation 9.1). In 2020 the Republic of Moldova indicated that the provisions regarding the forest inventory were included in the draft Forest Code, which was to be submitted for the approval by the Government, expected in September 2020. Once the Forest Code is adopted by the Parliament, the Agency “Moldsilva” will develop and approve the methodology for the NFI (which can therefore be verified under the fourth EPR cycle).

The environmental monitoring system established in 1977 in Mongolia did not require collecting information on biodiversity. Instead, the periodic (four-yearly) nationwide surveys and wildlife censuses, assessing the population size of wildlife species of different biomes (steppe and desert, mountains, forest), targeted at species considered economically important (e.g., argali sheep, ibex) or ecologically important (e.g., the Mongolian gazelle) were commissioned by the state. However, the last of such nationwide assessments was carried out in 2010, not repeated in 2014, due to the budgetary shortages since 2012. Thus, after 2010 data on biodiversity was gathered from scientific field research, carried out on a project basis by national and international scientific institutions, environmental NGOs, and international research and conservation organizations; supplemented by observations by PA rangers and relevant departments of the aimag regional administrations. Monitoring of wetland and riverine ecosystems, and of migratory bird species was carried out. In general, the capacities for carrying out biodiversity monitoring on a regular basis were seriously impaired by the lack of funding, equipment and trained personnel. As for forest monitoring, subnational forest inventories were carried out at aimag level on a continuing basis at 10-year intervals, while the first national level forest inventory (the Multi-Purpose NFI) was conducted in 2014–2016 by the Forest Research and Development Centre, in collaboration with the main forestry institutions, university and research organizations.

The 3EPR of Montenegro contained an alerting information that “Montenegro changed its approach to the monitoring of biodiversity in 2010, from species- and habitats focused monitoring to location-focused monitoring of species and habitats”, which can probably be interpreted that due to funding shortages (the 3EPR mentioned that the budget for monitoring activities has constantly been decreasing since 2009) the biodiversity monitoring activities were intentionally limited to observations in only few selected sites. Indeed, 3EPR reported that “Since the change to the monitoring approach, 24 locations were examined in 2011, six in 2012 and five in 2013, to establish the necessary baseline information”, which shows that such ‘baseline information’ was collected from the constantly decreasing number of monitoring plots, while data gathered from e.g., 5 sites can hardly provide sound ‘baseline information’ representative of the whole country. However, according to the country self-assessment in 2020, some additional funds were allocated in 2018 and 2019 for monitoring the state of biodiversity, also in the context of identification of potential Natura 2000 sites. As for the monitoring of forest ecosystems, 3EPR only noted that a NFI was in the final stage of development, which progress should possibly be assessed under the fourth EPR cycle.
3EPR Chapter 3 (on environmental monitoring, information and education) of Morocco stated that “Morocco does not monitor its biodiversity, including forests”. At that time the system for monitoring, collecting and managing environmental information in Morocco was still under development, largely impeded by the absence of a coherent related legislative and policy framework, as well as officially adopted standard criteria for the classification of species and habitats, lack of expertise, qualified personnel (incl. taxonomists), equipment and facilities. In result, data concerning several groups of species (e.g., flora, invertebrates) was largely missing. However, statistical reports included some data related to biodiversity, e.g., the status of selected species of fauna and flora, and trends in forest development.

At the time of the 3EPR, monitoring of biodiversity in North Macedonia was conducted on an ad hoc basis, depending on funding availability under international projects. Neither the national biodiversity monitoring system nor the National Biodiversity Information System (the latter established in 2011 under an UNDP project) were operational. Biodiversity monitoring was, depending on available resources, carried out solely in 3 national parks, focused on selected species and habitats. According to the 2018 NBSAP for the period 2018–2023, the establishment of the monitoring system for biological diversity was planned for the period between 2020 and 2023. Regular monitoring of the forest health state was carried out by the relevant university faculty, contracted by the state on annual basis (however not covering forest ecosystems biodiversity). Comprehensive monitoring of forests and the NFI were missing, which impeded the implementation of sustainable and multipurpose forest management. Most recently, according to the country self-assessment conducted in 2020, the 5-year national monitoring plan was recently prepared by the Ministry of Environment and Physical Planning focused on nationally protected species and habitats as well as species and habitats of the EU importance, followed by the elaboration of draft monitoring protocols for several habitats, plant and animal species, under the EU approximation process, and testing such in 2 PAs. Nevertheless, the progress was still hindered by the lack of state funding and the absence of separate budget line for monitoring activities. Moreover, a nature conservation agency or institute which could be tasked with biodiversity monitoring was missing. As for the forests, although the related monitoring remained primarily focused on forest diseases and damages, some activities for the identification of high nature value (HNV) forests were recently implemented.

3EPR Chapter 4 (on environmental monitoring and information) of Romania stated that a system for biodiversity monitoring has been established, however the country has not yet adopted standard guidelines on monitoring protocols and methodologies for monitoring the conservation status of species and habitats of community interest, in accordance with the provisions of the EU Habitats and Birds Directives. Due to the above, biodiversity monitoring was conducted individually at each PA, following its own monitoring methodology, in accordance with the 5-year monitoring plan adopted for each PA. Responsibilities for monitoring in PAs have recently been withdrawn from the Institute of Biology and entrusted to the National Agency for Natural Protected Areas (NANPA), which had limited capacities, at least prior to the completion of recruitment of staff at its territorial units. On the contrary, the NFI was carried out regularly every five years, using both the orthophotomaps and systematic field sampling in permanent monitoring plots. In late 2019 the Government pledged financial and logistic resources to launch the third cycle of the NFI, and a budget allocation for the purchase of satellite maps.

At the time of the 3EPR, no biodiversity monitoring programme was in place in Serbia, and monitoring activities prioritized research on rare and threatened species, conducted by the Institute for Nature Conservation of Serbia (which maintains the Central Register of Protected Natural Resources) and the Institute of Nature Conservation of Vojvodina Province, but the resulting databases on species and habitats have not yet been completed or fully digitized. Forest monitoring in Serbia has been conducted by the Institute of Forestry in Belgrade, and the Institute of Lowland Forestry and Environment in Novi Sad, in accordance with the ICP Forests Programme since 2003, i.e. level I monitoring of forest condition (based on some 130 monitoring sample plots) and level II concerning forest vitality (conducted in 2 national parks). According to the 2020 country self-assessment, the fully operational system for monitoring of biodiversity is still being developed.

19 www.zzps.rs/wp/centralni-registar/?lang=en&script=lat
In Tajikistan neither forest nor biodiversity monitoring was conducted, a national biodiversity monitoring system was still missing, mainly due to the lack of human, technical and financial capacities. In result, available information was often fragmented and outdated; moreover, it was usually scattered among different sources, and not available in digital form. The last forest inventory was carried out before 1991, no systematic monitoring of forest ecosystems has been carried since 1991, and no forestry databases were in place. In the above situation, parameters related to biodiversity and forest ecosystems (e.g., the size of forested areas, forest species composition, reforestation and afforestation, and population size of animal and bird species) were simply estimated by the Forestry Agency.

According to 3EPR, Uzbekistan still had no operational integrated biodiversity monitoring and information system, although, pursuant to national legislation, monitoring of the animal and plant world shall be an integral part of state environmental monitoring. In 2016, the Government approved the Programme of Environmental Monitoring for 2016–2020, including the monitoring of biological diversity, however the scope of such activities was spatially limited, carried out on a regular basis only in some PAs, in particular those of legal entity status that employed research staff and field inspectors. However, beginning from 2018, the populations of some rare and threatened Red Book species were also monitored outside PAs. Cadastral works on flora and fauna were undertaken in sequence in selected administrative regions, thus not continued and verified in the following years. The remaining large part of the country had not yet been sufficiently studied. Some regular biodiversity monitoring (only of selected species) was also carried out by the state forestry units. As the NFI was last carried out in 1987, forestry planning was based on annual evaluations by forest management enterprises. According to the 2020 self-assessment, the procedure for conducting state monitoring of flora and fauna was developed and recently approved, responsible bodies and organizations were appointed. However, the information database (State Cadastres of Flora and Fauna) using the modern geoinformation technologies (GIS) is planned to become operational until 2023, so that the progress should possibly be assessed under the fourth EPR cycle.

Conclusions:

To summarize, only Belarus and Bulgaria had operational biodiversity monitoring systems at the time of their 3EPRs, while Bosnia and Herzegovina and Uzbekistan were progressing in this direction. In most other countries, biodiversity monitoring was more or less operational and effective only inside PAs (sometimes also in state forestry units) while the remaining (and always prevailing) non-protected part of the country’s territory either remained “terra incognita” in terms of researching the species occurrence, and monitoring trends in the size of species populations, or had been researched occasionally and irregularly.

Forest monitoring was best developed in Belarus, Bulgaria, Kazakhstan, Republic of Moldova, Mongolia, Romania, and Serbia, but several countries did not have updated national forest inventories (but at the time of the 3EPR Albania, Georgia, and Montenegro were progressing in this respect)

The shortcomings of biodiversity and forest monitoring common in numerous 3EPR countries constitute a critical bottleneck for the elaboration and adoption of sound and effective evidence-based conservation policies. It is also worth noting that recommendations concerning possible improvements in monitoring were addressed to the vast majority of the 3EPR countries (except for Belarus) and still remain a challenge to most countries (see sub-section 2.1).

1.4. Trends in development and management of protected areas

As anticipated in the title of the EPR Chapter on biodiversity and PAs, the proper assessment of trends in the development and management of PAs (and their networks), constituting the second main theme of the above chapter, shall be the second most important task of an EPR expert responsible for this part of the EPR (thus, also requires particular attention in this assessment).
Designation and management of PAs can be one of the most effective means towards the conservation or active protection of ecosystems, habitats and species. The further development and improvement of national PA system is one of the possible “country responses” to prevent main threats, and mitigate anthropogenic pressures on environment, natural ecosystems, and species diversity.

Hence, progress in the development and effective management of PAs can largely facilitate the achievement of several Targets set by the UN 2030 Agenda for Sustainable Development (further as SDG Targets), in particular SDG Targets: 6.6 (concerning the protection and restoration of water-related ecosystems), 11.4 (concerning the protection and safeguarding of the natural heritage), 14.5 (concerning the conservation of coastal and marine areas), 15.1 (concerning the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems), 15.4 (concerning the conservation of mountain ecosystems and their biodiversity), 15.5 (concerning the prevention of natural habitats degradation and loss of biodiversity, the protection and prevention of the extinction of threatened species).

Moreover, several above SDG Targets (in particular 15.1 and 15.5) correspond with targets set by the CBD Strategic Plan for Biodiversity 2011–202020 (known as Aichi Biodiversity Targets). The development and effective management of PAs has been a pre-requisite for the achievement of the Aichi Biodiversity Target 11 “By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems”.

Furthermore, the effective implementation of the PA concept into practice has been crucial for the successful achievement of the two other Aichi Biodiversity Targets, No 5 “By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced” and No 12 “By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained”.

Last, but not least, regardless of the final wording of the CBD Post-2020 Global Biodiversity Framework (GBF), which shall be adopted at the fifteenth meeting of the Conference of the Parties to the CBD (CBD COP15), the tasks to retain and restore freshwater, marine and terrestrial ecosystems (draft Target 1) and to protect sites of particular importance for biodiversity through PAs and other effective area-based conservation measures (draft Target 2) shall remain valid, and outline the desired activities for the next decade/s.

Thus, development and management of PAs (and their networks) shall remain one of the two key components of the biodiversity-related chapter under the fourth EPR cycle.

Methodological remarks

According to the written “Explanatory note on drafting process” provided to each EPR expert: “The chapter should provide, for each topic covered, (1) a description of the development of the issue within the country during the period covered by the EPR (2) an assessment of its current status, and (3) an evaluation of environmental performance, especially in terms of achieving the objectives set by the country itself”.

However, a description of the current situation and progress made in the development and management of PAs should preferably begin from mentioning the legal act/s providing basis for PA designation procedure, and the explanation of the most important terms used in this sub-section, i.e., by listing the different national PA categories applied in accordance with relevant national legislation and comparing such with IUCN PA management categories.

20 CBD Decision X/2. The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets
The above is quite essential due to the fact that the same term can have a completely different meaning, depending on the national legislation of a particular country. For example, the term “national park” is commonly understood as a PA meeting the criteria of Category II of the IUCN PA management categorisation system, according to which a national park should be a large natural (or near natural) area, set aside to protect large-scale ecological processes. Moreover, it should be “of sufficient size and ecological quality so as to maintain ecological functions and processes that will allow the native species and communities to persist for the long term with minimal management intervention”.21

An example of a PA meeting the above criteria is e.g., the Tajik national park in Tajikistan, encompassing the area of 2,611,674 ha (including strictly protected zone of 2,029,811 ha), stretching over the vast and pristine natural ecosystems of the inaccessible Pamir Mountains, where management interventions are in fact hardly possible.

However, a ‘national park’ is also the name of the national PA category applied in neighbouring Uzbekistan, where national parks can be “created through the restoration and reproduction of flora”, including the application of complex agrotechnical measures (hence, their establishment does not require the presence of natural areas of high ecological qualities and conservation values), which is a case of Durmen national park, established on the basis of a village park zone, of the total area of 32.4 ha, being much more a nursery for rare plant species than a PA which could protect any ecosystem or viable fauna populations. Of course, Uzbekistan does have PAs of the IUCN cat. II, but such are named ‘nature parks’, while Durmen national park could probably be assigned the IUCN cat. IV (Habitat/Species Management Area).

Analysis of the compatibility of the national PA categorization system with that of the IUCN, and the comparison of the number and total area of PAs in each category allows to assess whether e.g., the natural ecosystems and habitats of viable populations of rare and threatened species are adequately preserved and left undisturbed in at least some part of their geographical range of occurrence in the country (subject to strict / passive protection, as in PAs of IUCN categories Ia, Ib, and core zones within PAs of IUCN cat. II, or ‘zapovednik’ in the former USSR nature conservation terminology), are subject to active protection measures (incl. restoration of ecosystems, habitats and species, e.g., in other zones of PAs of IUCN cat. II) or are managed mainly for the protection and limited economic use (more or less sustainable) of particular species or habitats (IUCN cat. IV, or ‘zakaznik’ in the former USSR nomenclature).

Such analysis can also indicate whether the adoption of legal protection of particular rare and threatened species led to the designation of an adequate network of e.g., smaller strict nature reserves, safekeeping the main refuges and mainstays of species concerned (for example, such nature reserves aimed at the protection of rare and endangered plant species and communities were absent at the time of the 3EPR in Tajikistan).

Furthermore, the EPR should explain the objectives for the designation and management of each national PA category, legal status and powers granted by the national legislation, PA protective regime and functional spatial zonation pattern (if applicable).

However, the presence of PAs (of different management categories and protective regimes) in the official statistics and country reports does not yet prove its success in nature conservation, as such largely depends on the legal powers and operational capacities of PA managing agencies, authorities and entities (which should therefore also be briefly assessed), the effectiveness of law enforcement, and availability of funding for the implementation of the full set of protective and restorative measures, prescribed in PA management plans.

21 www.iucn.org/theme/protected-areas/about/protected-area-categories
22 www.iucn.org/theme/protected-areas/about/protected-areas-categories/category-ii-national-park
23 Tajik national park (name used in all documents) should rather be referred to as the state nature park, according to the terminology of the 2011 Law on Specially Protected Natural Areas
Furthermore, the total area encompassed by PAs in a particular country, and its increase over the EPR reporting period (resulting in the increased coverage of the country’s territory by PAs) can indicate the progress in the achievement of relevant aforementioned SDG Targets (and Aichi Biodiversity Target 11), but again does not prove that all best preserved areas of representative natural ecosystems as well as the main refuges and mainstays of rare and threatened species protected by the national legislation are already covered by the national system of PAs.

As indicated in the concept of SDG indicator 15.1.2 (Proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs, by ecosystem type)24 “Such percentage area coverage statistics do not recognise the extreme variation of biodiversity importance over space (…), and so risk generating perverse outcomes through the protection of areas which are large at the expense of those which require protection”.

Hence, the inclusion of large natural and undisturbed areas into the national PA system (whenever feasible) is always recommended and beneficial for the conservation of natural ecosystems and ongoing ecological processes but may not alone ensure the full protection of e.g., plant species inhabiting many other smaller refugia, scattered all around the country and located beyond the boundaries of these large-scale PAs.

Another important aspect (in particular for PAs of IUCN categories Ia, Ib, and II) is the presence of legally designated external buffer zone/s, preventing and minimising adverse impacts of e.g., economic uses of areas surrounding a PA (in case of UNESCO WH sites recommended by points 103–104 the Operational Guidelines for the Implementation of the World Heritage Convention,25 and always required for UNESCO MAB biosphere reserves). It is also important that such buffer zones are delimited accordingly to ecological criteria and natural characteristics of the surrounding areas (e.g., topography, land cover, landscape features, fauna migration corridors, current land use) and based on sound scientific and economic justifications, not on administrative indicators. An example of such indicators could be the 2 km minimum width of the buffer zone imposed by the legislation of Kazakhstan, which is sometimes (mis)interpreted literally, as the main valid requirement indicating the external boundary of the PA buffer zone, thus ‘automatically’ limited to the allowed above minimum in the case of Ile-Alatau state national nature park.

However, it should be reminded that the main EPR objective under this sub-section should be to ‘monitor the change’ - assess and report on the country progress (or the lack thereof) in development and management of PAs over the EPR period, in particular:

- Designation of new PAs and/or spatial extension of existing PAs
- Raising the legal protective status of PAs, improvements of their functional zonation, designation of external protective buffer zones
- Improvements in the efficiency of PA management, e.g., raising PA operational capacity, staff training, investments in PA infrastructure and rangers’ field equipment.

**Coverage of protected area development and management subject in 3EPR reports**

Separate sections on PA development and management were present in relevant chapters of most 3EPR countries, sometimes information on PAs was available also in other 3EPR chapters. In case of Belarus, Bulgaria, Georgia, the Republic of Moldova, Morocco, and Tajikistan the same section covered both the development and management of nationally designated PAs, and of the ecological networks. As for Montenegro and Serbia (which 3EPRs did not contain a chapter on biodiversity and PAs) some basic information on PAs was available in other 3EPR chapters.

However, these sub-sections substantially differed among the EPRs in terms of length and quality, in some EPRs PAs were only perfunctorily dealt with, although the number of PAs of different national categories and recent changes in the per cent share of the national PA network in the country’s territory were usually provided (probably perceived as the required obligatory part of the chapter), while more detailed explanations on the national PA categories (incl. information on their management objectives, designation procedure, legal status, protective regime, functional zonation pattern), information on the presence (or absence) of PA external buffer zones, and the progress in the development, adoption and implementation of PA management plans, and assessment of PA management capacities and effectiveness were often missing.
Trends in development and management of protected areas, and 3EPR country performance (on the basis of the 3EPRs, VNRs and additional information provided in 2020 by countries)

Albania

In case of Albania, the short 3EPR section 9.5 mentioned the 2002 Law on Protected Areas, stated that PAs were classified according to IUCN categorization, mentioned the national PA categories (when informing on the number of PAs under each category) but with no further explanations. According to section 9.5, as of 2015 (although the 3EPR cut-off date was mid-November 2017), Albania had 15 national parks, 5 protected landscape areas, 4 strict nature reserves, 23 managed nature reserves, 2 nature and science reserves, 4 protected resource areas and 750 monuments of nature (hence, 803 PAs, not “800” as stated in section 9.5) encompassing the total area of 477,566 ha. No information on the PA buffer zones was provided. Section 9.5 included the map of the national PA network (more relevant to the next section 9.6 concerning ecological networks).

The information on the designation of new PAs in section 9.5 is not precise, as e.g., the sentence “Since 2011, Albania has proclaimed one new regional nature park, Lake Ulzi, in 2013” is soon followed (and somehow supplemented) by another one, saying that “In 2014, the Regional Nature Park Nikaj i Mertar was established”, thus mentioning another area of the same national PA category, also designated within the 3EPR reporting period. It should also be noted that the ‘regional nature park’ national category is neither mentioned in the previous paragraph (informing on the number of PAs under each category) nor in the legend of map 9.1 acquired from the Ministry of Environment (despite that map 9.1 is dated Feb. 2017, the latter regional nature park, est. in 2014, is not included).
Section 9.5 stated that no new PAs were designated in 2015–2017, but at the time of the 3EPR the proclamation process for 2 new PAs was conducted, concerning the Porto Palermo marine PA and the Albanian Alps National Park, which will encompass three already existing PAs (Lugina e Valbones NP, Thethi NP, and Lumi i Gashit Strict Nature Reserve, according to the feasibility study by UNEP26).

Furthermore, section 9.5 noted the progress in 2011–2015 concerning the adoption of management plans for 11 PAs (table 9.2), while 2 other management plans, for Shebenik-Jabllanice National Park, and Buna River-Velipoja Managed Nature Reserve were in adoption process, while 3EPR Chapter 4 on the implementation of international agreements and commitments noted that PA management plans were in preparation for 2PAs, Divjake-Karavasta NP (which is inconsistent with table 9.2, informing that the management plan for this NP has already been adopted in 2015) and for the planned Albanian Alps NP (which should possibly be verified under the fourth EPR cycle).

As for PA operational capacities, section 9.5 contains inconsistent statements, informing that “The Government is making significant efforts to make protected areas functional, which can be seen through their designation and management” immediately followed by the next sentence “So far, all protected areas depend strictly on the state budget, and, for this reason, the majority of protected areas still lack basic infrastructure and enforcement mechanisms”, and that the state budget could not always fully finance “staff costs and utilities”. In the above context Section 9.5 noted the expected improvement of the situation, upon the adoption of the new Law on Protected Areas No. 81/2017, according to which revenues generated by PAs can be used for “the development of protected areas, the purchase of transport and equipment for field work, the development of management plans and inventories, afforestation, fire prevention and communication and awareness activities”. However, section 9.5 pointed out that the above improvement would require the adoption of subsidiary legislation (which successful adoption and effective implementation should possibly be verified under the fourth EPR cycle).

According to additional information provided in 2020 by Albania on its progress in achievement of CBD Aichi Target 11, PA management plans were implemented, and PA management committees were revised and updated, after the approval of the new Law on protected areas 41/2017 (which number is different that provided in 3EPR, to possibly be verified under the fourth EPR cycle). 5 PA management plans prepared by SELEA project in 2014 were to be revised and updated in 2021–2022 (which should possibly be verified under the fourth EPR cycle).

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26 Feasibility Study on establishing a transboundary protected area Prokletije / Bjeshkët e Nemuna Mountains. UNEP Vienna ISCC, 2010.
Belarus

In the 3EPR of Belarus, quite complex information on PAs contained its Introduction where Table I.2 provided the number of PAs under each national category, the total area under each category, and per cent share in the national territory (a similar table is surprisingly missing in Chapter No 7 on biodiversity and PAs).

According to 3EPR, as of September 2015, Belarus harboured 1,245 PAs encompassing approx. 1,808,600 ha in total (which accounted for 8.7 per cent of the country’s territory), including 1 nature reserve (Berezinsky Biosphere Reserve) and 4 national parks (Belovezhskaya Pushcha, Braslav Lakes, Narochansky, and Pripyatsky) together stretching over the total area of some 475,400 ha, further as many as 363 ‘preserves’ (1,232,000 ha in total), and 886 nature monuments (15,400 ha in total), including 319 nature monuments of national importance and 567 of local importance.

However, if properly calculated, the total number of PAs would account for 1,254 (5 + 363 + 886) not “1,245” (as stated in table I.2), table I.2 indicated also that preserves had either a nationwide (96 PAs, 940,500 ha) or local (267 PAs, 377,300 ha) importance, so that their total area would, if properly calculated, account for 1,317,800 ha (940,500 + 377,300) not “1,232,000 ha” (as stated in table I.2). Therefore, the exact total area covered by nature preserves could not be determined here. It should also be noted that the above total numbers provided in tables I.2 and I.3 do not include Polessye State Radiation and Ecological Reserve (216,093 ha).

Furthermore, the Introduction described in detail several PAs: Berezinsky BR (85,200 ha), Belovezhskaya Pushcha NP (150,069 ha), Pripyatsky NP (88,550 ha, Braslav Lakes NP (64,490 ha), Narochansky NP (over 87,130 ha).

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Section 7.2 on PAs and ecological networks mentioned the 1994 Law on Specially Protected Natural Areas, and the national PA categories, with no further explanations. Moreover, no information on the PA buffer zones was provided. This section contains box 7.1 concerning Polessye State Radiation and Ecological Reserve (established in 1988, after the Chernobyl disaster), however more focused on radioactivity aspects than its obvious biodiversity values, e.g., the abundance of red-listed species (incl. the European bison, brown bear, lynx, European badger), a large population of the European pond turtle, and the Przewalski horse (introduced in 2007), which probably justify its inclusion into the national ecological network.

Some new PAs must have been designated within the 3EPR reporting period, in particular in 2013, 2014 and 2015, section 7.2 stated: “Following the proclamation in February 2015 of new protected areas, the total area of protected natural territories amounted to 8.6 per cent of the country’s total territory, and as of 1 September 2015 it reached 8.7 per cent of the country’s total territory”. Although section 7.2 did not indicate the national category/ies of such newly established PAs, such could only be ‘preserves’ or nature monuments (as Berezinsky Biosphere Reserve, and all 4 national parks were designated before 2EPR). Furthermore, section 7.2 noted the progress in the adoption of PA management plans since 2006 (for Berezinsky Biosphere Reserve, 4 national parks and 13 national preserves), including the PA-related local product branding scheme implementation.

Due to the fact that in 2020 Belarus did not undertake the self-assessment of its progress in the implementation of the 3EPR recommendations, and did not provide any additional information, in order to update the above information on trends in development and management of PAs, its 6CBD NR28 (published in December 2018) and publicly available statistical data have thoroughly been examined.

6CBD NR noted that as of 1 January 2018 the national PA network included 1,285 PAs: 1 nature reserve, 4 national parks, 99 nature “zakaznik” preserves of republican significance (35 landscape, 38 biological, 17 hydrological and 9 aquatic/wetland), 277 nature “zakaznik” preserves of local importance, 326 natural monuments of the republican and 578 of the local significance. Moreover, 6CBD NR provided a map of the national PA network of Belarus, as of 1 January 2017.

As for new PA designations, 6CBD NR noted that 14 nature “zakaznik” preserves of republican significance encompassing the total area of 81,600 ha were designated between 1 January 2015 and 1 August 2018, and that in 2015–2018 2 “national biosphere reserves” (Osveiskiy-Krasny Bor, and Pripyatskiy) were designated.29 Pripyatskiy (or “Pripyatškoe Polesie”) biosphere reserve established in 2016 includes National Park “Pripyatškuy” and the republican reserves “Old Zhaden” and “Olmanskie swamps”.30 It should be noted that a “national biosphere reserve” category was missing among the national PA categories of Belarus.

6CBD NR stated that it was planned that by 2020 Osveiskiy-Krasny Bor national biosphere reserve shall become part of the transboundary Belarusian-Russian Biosphere Reserve “Zapovednoe Poozerye”, while Pripyatskiy (or Pripyatškoe Polesie) national biosphere reserve shall become part of the transboundary Belarusian-Ukrainian Biosphere Reserve “Pripyatškoe Polesie”. The above information, and the legal status of the above “national biosphere reserves” should possibly be verified under the fourth EPR cycle.

As for PA management, 6CBD NR noted that 27 PA management plans were developed in 2011–2018. However, the above does not indicate whether such plans have formally been approved/adopted and implemented.

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28 https://chm.cbd.int/database/record?documentID=241352
29 В период с 2015 по 2018 гг. были объявлены национальные биосферные резерваты «Осовейский-Красный Бор» и «Припятский».
30 На национальном уровне в 2016 г. принято решение о создании биосферного резервата «Припятское Полесье» в составе Национального парка «Припятский» и республиканских заказников «Старый Жаден» и «Ольманские болота».
Bosnia and Herzegovina

As for Bosnia and Herzegovina, the legal basis for PA designation varied among the entities. According to 3EPR Chapter 1 (on legal, policy and institutional framework) the relevant legal act for the FBiH was the 2013 Law on Nature Protection. However, its subsidiary legislation was missing at the time of the 3EPR, which could have been the reason for the substantial inconsistencies between the cantonal spatial plans (delineating existing PAs and stipulating the designation of new PAs) and the development plans of municipalities (allowing e.g., construction in these areas) which largely hampered the proclamation of new PAs in the Federation. Furthermore, the responsibility for the designation of landscape or natural monuments, in accordance with the nature protection plan adopted for each canton, was delegated to respective cantonal ministries. Designation of new PAs was better progressing in RS, where the PA designation procedure was defined by the Law on Nature Protection (OG RS, No. 20/14), while a separate Law on National Parks (OG RS, No. 21/96, 75/10) included important provision providing for the ‘preliminary protection’ prior to the formal PA designation for natural areas “if the available data indicate that the area has characteristics of a protected area and if the procedure for protection has been initiated”. In both above entities the designation of a new national park was accompanied by the adoption of a special legal act, e.g., Law on National Park “Sutjeska” (OG RS, No. 121/12), Law on National Park “Drina” (OG RS, No. 63/17), and the Law on National Park “Una” (OG FBiH, No. 44/08). In Brčko District (BD) (which, according to 3EPR, only had a protected landscape area at the time of the 3EPR) the relevant legal act was the 2004 the Law on Nature Protection31 (OG BD, No. 24/04, 1/05, 19/07, 9/09).

3EPR chapter 11 (on biodiversity and PAs) included a very short section 11.2 “Trends in development and management of protected areas”, where an extensive quotation from the 2013 MDG Progress Report (solely expressing general concerns, and repeating SDG formulations, but providing no factual information) constituted the major part (over 61 per cent) of the textual part. Section 11.2 noted the presence of 30 PAs, their total area and per cent share in country’s territory, on the designation of 10 new PAs since 2013

(“2 protected landscapes, 1 forest park, 7 caves”), and mentioned names of 3 national parks in RS and 1 national park in the FBiH (table 11.1 contained names, year of designation, relevant IUCN category, and size of 30 PAs, although information on BD was missing). As for the PA designation procedure, section 11.2 explained “Establishment and management of these national parks are in accordance with IUCN Category II”. No information on, e.g., PA zonation pattern and buffer zones, or PA management plans was provided.

It should be noted that the information cut-off date for 2EPR of Bosnia and Herzegovina was 28 October 2010, therefore 3EPR section 11.2 should inform on the progress in the designation of new PAs over a considerably longer period than since 2013. According to 3EPR table 11.1, 13 PAs were designated in 2011–2017, namely 2 small-sized ‘protected landscapes’ in the FBiH, and 11 new PAs in RS, incl. 1 strict nature reserve (IUCN cat. Ia, Lom Primeval Forest, est. 2012, 297.8 ha), 8 nature monuments, and 2 small-sized (27.4 and 35.7 ha) PAs allowing sustainable use of natural resources. It should also be explained that IUCN cannot prescribe the procedures for establishment (designation) of PAs in any country, which is a subject to be regulated by the national legislation.

Information on PAs available in the 3EPR of Bosnia and Herzegovina was updated one year later in its 2019 VNR, which contains information on PAs, incl. a graph (No 17) illustrating trends in the designation of PAs in 2006–2016, for each of the 6 IUCN PA categories. Furthermore, VNR noted the presence of 12 PAs in the FBiH, and 23 PAs in RS, and emphasized the progress in the designation of new PAs in RS (from 3 as of early 2011 vs. 23 as of 2018). PAs in Bosnia and Herzegovina included 1 national park in the FBiH (Una NP, 19,800 ha), and 3 national parks in RS (Drina, Kozara, and Sutjeska).

Hence, according to 2019 VNR, 20 new PAs were designated in Bosnia and Herzegovina in 2011–2018, mostly within 3EPR reporting period (between the information cut-off dates of subsequent EPRs, 28 Oct. 2010 and 16 Nov. 2017 respectively), more than 10 new PAs indicated in 3EPR section 11.2, or 13 new PAs indicated in table 11.1.

According to the information received in 2020 as a result of the self-assessment on the implementation of the 3EPR recommendations by Bosnia and Herzegovina, 23 new PAs have been designated since 2012 in RS (3 more than indicated in 2019 VNR), in 2018–2020 procedures for the proclamation of 5 new PAs in RS (Mokranjska Miljacka, Praca canyon, Tara canyon, Orjen mountain, and Tisina pond) were conducted.

As neither 2019 VNR nor the 2020 self-assessment provided the names of PAs designated in Bosnia and Herzegovina since 2018, such information should possibly be verified and updated under the fourth EPR cycle.

Another issue to be clarified under the fourth EPR cycle is the presence (or absence) of PAs of IUCN cat. Ib (wilderness areas), as according to graph 17 (VNR) such were present in the country only in 2011–2015, while none of the above sources elaborated on such or explained the reasons for their disappearance in Bosnia and Herzegovina.

Unfortunately, 6CBD NR32 by Bosnia and Herzegovina (published in July 2019) did not provide the information on existing PAs but repeated (on numerous pages) the general information that “The current surface of protected areas in entire BiH amounts to 2.28%, in FBiH 3.24%, and in RS 1.30%” and on planned extensions of the PA network.

Therefore, in order to update the above data on trends in development and management of PAs, other sources were used. According to available information, as of early 2021, there were only 11 PAs in the

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32 https://chm.cbd.int/database/record?documentID=246864
11 PAs in the FBiH included 1 national park (Una, 36,629.08 ha), 2 nature parks (Blidinje, 35,800.00 ha; Hutovo blato, 7,824.01 ha), 4 natural monuments (Prokoško jezero, 2,225.00 ha; Skakavac, 1,430.07 ha; Tajan, 4,948.35 ha; Vrelo Bosne, 603.44 ha), and 4 protected landscapes (Bentbaša, 160.90 ha; Bijambare, 497.00 ha; Konjuk, 8,645.34 ha; Trebević, 400.20 ha), therefore 99,163.39 ha in total, which accounted for 3.80 per cent of the entity’s territory (2,611,050 ha). Hence, compared to 2019 VNR, the total number of PA in the entity was smaller, but the PA coverage bigger than previously indicated.

25 PAs in RS included 2 strict nature reserves protecting virgin forests (Prašuma Janj, 295.00 ha, and Prašuma Lom, 297.82 ha, both designated in 2013), 3 national parks (Drina, 6,315.32 ha; Kozara, 3,907.54 ha; Sutjeska, 16,054.34 ha), 3 nature parks (Cicelj, 330.76 ha; Orjen, 16,715.83 ha; Una 2,772.60 ha), 3 ‘protected areas with sustainable use of natural resources’ (Park šuma Jelića brdo, 2.96 ha; Park šuma Slatina, 35.73 ha; Univerzitetski grad, 27.38 ha), 14 natural monuments (Girska pećina, 25.37 ha; Jama Ledana, 28.26 ha; Ljivečanski knez, 0.34 ha; Pavlova pećina, 13.40 ha; Pećina Đatlo, 43.42 ha; Pećina Kuk, 0.00 ha; Pećina Ledenjača, 7.40 ha; Pećina Ljubačevo, 45.45 ha; Pećina Orlovača, 27.01 ha; Pećina pod lipom, 6.10 ha; Pećina Rastuša, 11.39 ha; Vaganska pećina, 12.00 ha; Velika pećina, 820.92 ha; Žuta bukva, 0.50 ha), and 2 protected habitats (habitat or species management areas: Gromiželj, 831.30 ha; Tišina, 196.49 ha), therefore 48,824.63 ha in total, which accounted for almost 1.95 percent of the entity’s territory (2,505,300 ha).

As the information on the size of the protected landscape area in BD is not available, it can be estimated that the total area under legal protection in Bosnia and Herzegovina currently accounts for 147,988.02 ha (or 2.89 per cent of the country’s territory).

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33 http://e-prirodafbih.ba/en/protectedsites/
34 http://e-priroda.rs.ba/en/protectedsites/
Bulgaria

As for Bulgaria, its 3EPR Chapter 1 (on legal and policymaking framework and its practical implementation) noted that the 1998 Protected Areas Act (SG No. 133) defined six PA categories. Some names of these categories vary among different 3EPR chapters, as according to table I.2 (Chapter Introduction) such were reserves, national parks, natural landmarks, maintained reserves, natural parks, and PAs, while table 9.3 included reserves, national parks, natural monuments, managed reserves, nature parks, and protected sites. Section 9.2 “Protected areas, Natura 2000 protected sites and the national ecological network” extensively elaborated on their different management objectives, and function within the national PA system. However, it did not explain the protective regime of e.g., the “protected site” national PA category, and its categorization in line with the IUCN PA management categories (most probably compatible with IUCN cat. III).

3EPR section 9.2 reported on the progress in the designation of new PAs, by stating “Since 2000, there has been a 43 per cent increase in the number of protected areas, from 858 in 2004 to 1,012 in 2014, and a 25.56 per cent increase in the area covered by protected areas, from 544,394.9 ha in 2004 to 584,530 ha in 2015 (table 9.3).”

However, the above calculation was erroneous (thus misleading), as the above numbers indicate only 17.95 (not 43) per cent increase in the PA number, and only 7.37 (not 25.56) per cent increase in the PA area. Furthermore, table 9.3 provided data solely on the PA size (in ha), and did neither include data for 2004 nor 2014, but included data for 2000 (when 2EPR was published), thus allowed the assessment for a longer period. Therefore, according to table 9.3, the area covered by PAs factually increased in 2000–2015 from 514,864 ha to 584,530 ha (thus, by 13.53 per cent over these 16 years).

3EPR section 9.2 noted the designation of 3 new PAs as the main achievements for spatial nature conservation since 2000: Persina in 2000, Balgarka in 2002, and Belasitsa in 2008 (all these are nature
parks). In result, at the end of 2015, the PAs network in Bulgaria (1,012 PAs in total) included 3 national parks (Central Balkan, Pirin, and Rila), 11 nature parks (Balgarka, Belasitsa, Persina, Rila Monastery, Rusenski Lom, Shumensko plato, Sinite Kamani, Strandja, Vitosha, Vratchanski Balkan and Zlatni pjasaci), 55 reserves and 35 managed reserves, 564 protected sites and 344 nature monuments (hence, the number 1,012 did not change since 2014). No information on PA zonation pattern and buffer zones was provided. However, Section 9.2 emphasized that the recently designated nature parks are of IUCN cat. V, which protective regime does not stipulate the strict conservation approach, much more balancing the nature protection requirements with the sustainable economic regional development. However, section 9.2 also noted the number of “microreserves” (protected sites) designated in 2011–2015, aimed at the conservation of rare and threatened plant species of national importance.

As for PA management, 3EPR Chapter 1 (on legal and policymaking framework and its practical implementation) noted that management plans are obligatory for national parks, nature parks, strict and managed nature reserves, and voluntary for protected sites and natural monuments. The first management plans were adopted for all three national parks (Central Balkan NP and Rila NP in 2001, and Pirin NP in 2004), however at the time of the 3EPR only the updated management plan of Central Balkan NP was in force, while updated management plans of Pirin and Rila NPs were under adoption procedure. However, in accordance with the 2012 amendment of the Regulation for elaboration of PA management plans, previous ones remain effective until the entry into force of the subsequent plans, which ensured the continuity of their protection. At the time of the 3EPR, management plans for most of the nature parks were under the adoption procedure. As for other PA categories, section 9.2 reported that, as of 2016, management plans for managed reserves and protected sites were under preparation by the Ministry of Environment and Water. Therefore, the progress in the adoption of both new and revised PA management plans (not only for national and nature parks, but also for strict and managed nature reserves, and protected sites) should possibly be assessed under the fourth EPR cycle.

3EPR section 9.2 noted that national and nature parks were relatively well staffed; however, all PAs in Bulgaria were largely dependent on the EU funding, which is further elaborated under section 9.4, which explained that the state budget funding for PAs in 2008–2015 remained more or less constant (€2.5–3 million annually), which accounted for roughly €25 million, while another €28 million of the EU financial support allowed the PAs to fulfil their functions. Furthermore, section 9.2 reported that nature parks were not eligible for EU funding under Operational Programme “Environment” and were therefore expected to apply under OP “Regional Development” (which could possibly contain less favourable criteria).

According to 6CBD NR 4 new PAs were designated in 2017: “Kalna mutnitsa” protected site (22.5712 ha), “Narrow-leaved peony (Paeonia tenuifolia)” protected site (13.520 ha), “Kashkavalja” protected site (16.434 ha), and „Shrubby cinquefoil” protected site (34.457 ha), and further 4 in 2018: 2 PAs for conservation of natural habitats and wild flora and fauna (Devnenski hills and Kraitorska Dobrudzha), “Stulbishte” protected site in Mechka, and “Shrubby cinquefoil” in Betak (“with a total area of 722.91 acres”), Kaliakra Reserve was reduced by 2.1987 ha, while the “Stepite” protected site was increased by 2.0439 ha, and the “Marsh Snowdrop (Leucojum)” protected site in the “Blatoto” area was increased by 10.8976 ha. However, the same 6CBD NR noted that 3 new PAs were designated in 2017 with a total area of 52,826 ha, while 1 PA with an area of 2 ha was degazetted. 6CBD NR reported that “At the end of 2017 the number of protected areas in Bulgaria is 1 014 with a total area of 584 563.2 ha or 5.27% of the territory of the country”.

2020 VNR by Bulgaria updated the 3EPR information on the national PA network (providing data for 2015), according to VNR at the end of 2018 national PA designations applied to 1,016 areas, encompassing 584,861.5 ha in total, including “55 reserves, 35 managed nature reserves, 3 national parks, 11 nature parks, 568 protected areas, and 344 natural monuments”. VNR stated that “Under the Law on Protected Areas, protected areas are divided into six categories of protection (in accordance with the requirements of the International Union for Conservation of Nature – IUCN)”, although the protective regime of “protected site” national PA category, and its categorization in accordance with IUCN criteria remain not yet explained – which could possibly be verified under the fourth EPR cycle).
Hence, the above new VNR data indicated that in 2016–2018 only 4 small new protected sites were designated, together adding only 331.5 ha to the total area of the national PA network of Bulgaria.

Surprisingly, in 2020 Bulgaria provided the ECE team the additional information on its progress in achievement of SDGs, according to which PAs of national categories encompassed 584,530 ha, thus exactly 331.5 ha less than indicated in its 2020 VNR, which means that these recently designated 4 protected sites were not taken into account.
In case of Georgia, no main legal act providing basis for PA designation an defining the related procedure can be identified on the basis of the 3EPR. Section 1.3 of the 3EPR Chapter 1 (on legal, policy and institutional framework) mentioned a number of laws related to the designation of particular PAs, i.e. the 2011 Amendment to the Law on the Creation and Management of Imeretida Caves Protected Areas (legal basis for the designation of 7 new nature monuments, and 1 managed reserve), 2011 Law on the Creation and Management of Javakheti Protected Area, 2012 amendment to the Law on the Status of Protected Areas (which allowed to designate 3 new nature monuments), 2012 Law on Machakhela National Park, 2013 Law on the Creation and Management of Nature Monuments (basis for the designation of 16 new nature monuments), and the 2014 Law on the Creation and Management of Pshav-Xevsureti Protected Area.

Section 6.2 of the 3EPR Chapter 6 (on biodiversity and PAs) did not list the national PA categories (in result, the explanation of their management objectives, legal status, protective regime, and functional zonation was also missing), and did not inform on the presence (or absence) of their legally established external buffer zones. The main focus of this section was on the recent developments since 2010, including the designation of Javakheti National Park and five managed reserves in its neighbourhood (in 2011), Machakehla National Park (2012), Pshav-khevsureti National Park together with neighbouring Asa Managed Reserve and Roshka Natural Monument (in 2014), and 21 other nature monuments (thus mentioned 22 new nature monuments, while section 1.3 noted 26 new ones).

The number of PAs of different national categories was not provided in the 3EPR of Georgia, except for the information available in the 3EPR Introduction chapter on 10 national parks present in 2013. Therefore, such information should possibly be gathered under the fourth EPR cycle.
3EPR section 6.6 noted the EU project, aimed at building the capacity of staff of the “central apparatus of the APA and local park administrations”, implemented in 4 pilot sites: Lagodekhi Protected Areas, Mtirala National Park, Imereti Caves Protected Areas, and Ajameti Managed Reserve.

According to the self-assessment on the implementation of the 3EPR recommendation 6.2 provided in 2020 by Georgia management plans for PAs of the national categories as well as for Areas of Special Conservation Interest (ASCIs) of the Emerald Network set under Bern Convention “are being integrated and developed”, which should probably be verified under the fourth EPR cycle.

According to the official website of the Agency of Protected Areas of Georgia, the national PA network includes 14 strict nature reserves (140,672 ha in total), 10 national parks (349,327.1 ha), 19 managed nature reserves (59,857 ha), 40 natural monuments (2,941.43 ha), and Tusheti Protected Landscape (31,518 ha). No multiple use areas have been designated so far. It should be mentioned that out of the above 40 natural monuments only 14 are not included into larger PAs of other national categories, unlike 26 remaining (3 natural monuments are located within Vashlovani Protected Areas, 5 in Kazbegi National Park, and further 18 in Imereti Caves Protected Areas), so that the areas of the above 26 natural monuments overlap with the area of PAs of other categories.

Should the above indicated spatial overlap be neglected, the total area of the national PA network of Georgia would currently account for 584,315.53 ha (or 8.38 per cent of the country’s territory).

Kazakhstan

The 3EPR of Kazakhstan comprehensively elaborated on trends in the development and management of PAs. Section 9.3 reported that the 2006 Law on Specially Protected Natural Areas defined 10 national PA categories, and further 6 categories of objects in the state nature conservation fund (which territory could either overlap with the PA network or constitute separate objects). National PA categories included: state nature conservation area (or zapovednik in the former USSR nomenclature), state national nature park, state nature reserve, state zoological park, state botanic garden, state dendrological park, state nature monument, state nature sanctuary (or zakaznik), state preserved zone, and state regional nature park. Section 9.3 explained the classification of PAs as of either republican (national) or local (oblast) significance, and those bearing the legal entity status or not, as well as on the implications of the above divisions on e.g., PA designation procedure, management and funding (first 9 above categories could be assigned the republican significance, while only the first 6 and the state regional nature park could have the legal entity status). Furthermore, section 9.3 elaborated on the protective regime of different functional zones of PAs, and characterised each of the 9 national PA categories, by explaining the management objective, compatibility with the IUCN categorization, protective regime, presence and regime of the external buffer zone (where applicable), noted average size, the number of PAs, their total area, and percent share in the country's territory (separately for each PA category). Furthermore, section 9.3 described the issues related to the external buffer zones, and management of PAs, including management planning, staff capacity building, as well as assessed the operational and technical capacities, and the efficiency of the PA system.

Section 9.3 reported on the designation of new PAs since 2008: 2 state national nature parks, 2 state nature reserves, 2 state nature sanctuaries, 2 state regional nature parks, and 1 PA of local significance (providing PA name and size of area in each case), and on the examples of particular PA extensions or decrease in area within the reporting period.
In result, in 2008–2018, the PA network increased by some 2,392,741 ha, and as of 2018, Kazakhstan had 121 PAs of republican significance and state regional nature parks (table 9.3) encompassing the total area of 24,375,034.63 ha, including 40 PAs bearing legal entity status and therefore most effective: 10 state nature conservation areas, 12 state national nature parks, 3 state regional nature parks, 5 state nature reserves, 4 state zoological parks, 5 state botanic gardens, and 1 state dendrological park (together encompassing 7,039,409.96 ha), and 81 PAs without the legal entity status: 26 state nature monuments, 50 state nature sanctuaries, and 5 state preserved zones (encompassing further 17,335,624.67 ha). The spatial distribution of PAs is illustrated by map 10.

In 2019 the above information was updated by the VNR of Kazakhstan, the comparison of information from VNR table 2 and 3EPR table 9.3 indicates that 1 state national nature park and 1 state nature reserve were designated in Kazakhstan after 3EPR. Surprisingly, in Appendices to its VNR, Kazakhstan provided values (for 2010, 2015, and 2018) of its national indicator “Proportion of protected areas” replacing SDG indicator 15.1.2 (VNR), showing growing trend (8.8 per cent in 2010 vs. 9.6 in 2018) but did not provide its 2019 value, which (basing on table 2) would then account for 9.63 per cent of the total country’s territory, covered by the national PA network.
Republic of Moldova

As for the Republic of Moldova, 3EPR section 9.2 did not specify the legal basis for PA designation. Furthermore, it stated “Currently, there are 12 categories (eight according to IUCN criteria and four according to national criteria) of PAs in the Republic of Moldova”, which implied that the seven (not “eight”) IUCN categories are not included into the national legislation. In the above context, section 9.2 mentioned “simplification of national PA categories to achieve consistency with international criteria” among pending tasks. Section 9.2 did neither list nor describe the 4 national PA categories, but later mentioned a national park, scientific reserves, and landscape reserves (although referred to the last as “a regional PA category”). Section 9.2 described the management objectives of scientific reserves and mentioned the name of one (the Lower Prut Scientific Reserve). Section 9.2 noted that “Pestera Surprizelor Cave was given PA designation in 2008 in order to stop the pressure on the existing bat population living in the cave” but did not provide its PA category. Hence, the fourth national PA category in the Republic of Moldova remained not yet defined in 3EPR.

[According to 2015 NBSAP of the Republic of Moldova, the relevant legislation for the designation of PAs was Law no. 1538-XIII of 25 February 1998 on the fund of state protected natural areas. 2015 NBSAP noted that the national legal framework defined 12 categories of state natural PAs, and provided the numbers (and total areas) of PAs in each category, as follows: 5 scientific reserves (rezervații științifice), 1 national park (parcul național), 130 or 131 monuments of nature (monumente ale naturii), 63 nature reserves (rezervații naturale), 41 landscape reserves (rezervații peisagistice), 13 resource reserves (rezervații de resurse), 32 multifunctional management areas (arii cu management multifuncțional), 2 dendrological gardens (grădini dendrologice), 21 landscape architecture monuments (monumente de arhitectură peisajeră), 1 zoological garden (grădina zoologică), and 3 wetlands of international importance (zone ușcate de importanță internațională); the last 12th national PA category was a ‘biosphere reserve’ –

no areas had been indicated in 2015 NBSAP, as the first biosphere reserve was established in the Republic of Moldova in 2018].

Section 9.2 noted the presence of 312 PAs in the Republic of Moldova, “with landscape reserves and scientific reserves constituting the largest coverage with 52 per cent and 29 per cent of the PAs respectively” (which percentage probably concerned the share of these 2 categories in the total PA, not in the total number of PAs). Section 9.2 did not inform on the total area of all 312 PAs, the per cent share of the PA network (4.65 per cent) was provided for 2007 (despite that 3EPR cut-off date was 30 Nov. 2013). Furthermore, section 9.2 mentioned the efforts towards the establishment of “the first national park, with a coverage of about 34,000 ha, in the Orhei region, the central part of the country. It is expected to be established in 2013”. As for PA management, section 9.2 reported that management plans were not adopted for most PAs, despite that a standard form and template were available. However, scientific reserves (having own administrations) already had management plans, and the guidelines for management plan development were expected to be adopted by the Ministry of Environment by the end of 2013.

In the course of the self-assessment in 2020, the Republic of Moldova indicated its 2018 6CBD NR which noted that Orhei National Park was designated already in July 2013 (HP No. 201 of 12.07.2013) with the area of 33,792.09 ha, that PA network encompassed 210,695.87 ha or 5.8 per cent of the total territory of the country, and that the procedure for the proclamation of Nistru de Jos National Park commenced in 2018 (as a result of a project supported by the Austrian Government).

Surprisingly, 2020 VNR stated that “In total, 5.61 per cent of the Republic of Moldova is protected areas; this figure remained constant between 2014 and 2018. Of this area, 2.22 per cent is wetlands of international importance, while 3.39 per cent is areas with multifunctional management, resource reservations, landscape reservations, nature reservations, and so on.” (hence, Ramsar sites accounted for 2.22 per cent, and national category PAs for the remaining 3.39 per cent of the country’s territory). It indicates that the 2018 6CBD NR (which noted the 5.8 per cent share of PAs already in 2018) was not used for the preparation of the 2020 VNR by the Republic of Moldova.

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Mongolia

2018 EPR of Mongolia comprehensively elaborated on trends in the development and management of PAs. Section 11.3 stated that the 1994 Law on Special Protected Areas defined 4 national PA categories, which included a strictly PA, national park, nature reserve, and monument (either cultural or natural). Moreover, the national PA system also included the local PAs. Section 11.3 explained the management objectives of each PA category and its compatibility with the IUCN categorization and elaborated on the protective regime of different functional zones of PAs, presence and regime of the external buffer zone (where applicable), noted average size, the number of PAs, their total area, and per cent share in the country’s territory (separately for each PA category).

As of 2017, the national PA network of Mongolia included 20 strictly PAs, 32 national parks, 36 nature reserves, and 14 natural monuments, supplemented by no less than 1,108 local PAs. Solely the ‘state PAs’ encompassed 27,953,449.98 ha (17.87 per cent of the country’s territory). The above state-governed PA network was supplemented by the network of ‘local PAs’ stretching over the further 18,837,459.75 ha (12.04 per cent of the country). In result, as of 2017, the national PA network (annex IV, map 4 and table 11.2) covered in total 46,790,909.73 (29.91 per cent of the country’s territory), while the total size of external buffer zones (neglected in official statistics and databases) of strictly PAs was estimated for some additional 15 million ha (however, such could at least partly overlap with the above ‘local PAs’).

Section 11.3 explained that the ‘local’ PAs are designated by local authorities only for a definite period (of no more than 10 years), which could later be prolonged. Nevertheless, in result the total number of locally designated PAs constantly changed, while the current legal status, boundaries and area size of such PAs could not always be easily clarified or confirmed. Nevertheless, in several aimags of Mongolia such locally-designated PAs encompassed up to some 22–32 per cent of their whole territory. Although called ‘local’, such PAs can be large in size, as the largest ‘local’ PA in Mongolia (Khangain Bus designated by Bayankhongor Aimag) covered almost 1 million ha (989,126 ha), thus equal to almost 72 per cent of the territory of Montenegro, or more than one third of territories of Albania or North Macedonia.
Furthermore, 3EPR section 11.3 described the management purpose of external buffer zones of strictly PAs, mentioned the ‘natural sacred sites’ (which can be perceived as another category of PAs, also due to the fact that some were designated at the national level, by presidential decree), although too small in size to count, compared to the other, official PA categories. Section 11.3 described the progress in adopting PA management plans (obligatory for all state-governed PAs), and the PA administration system, which includes the option of delegating the powers to manage and administrate a PA by an NGO or herder group associations, on the contract basis (best known and most successful examples were those of Hustai Nuruu National Park, Ikh Nart Nature Reserve, as well as Gulzat and Khavtgar local PAs).
Montenegro

In case of Montenegro, which 2015 3EPR had no chapter on biodiversity and PAs, some information was available in its other chapters, i.e., Executive Summary, Introduction, Chapter 1 on legal and policymaking framework and its practical implementation, Chapter 3 on economic instruments and environmental expenditures for greening the economy, and Chapter 5 on the implementation of international environmental agreements.

According to 3EPR section 1.1, the 2009 Law on National Parks (OG 56/09, 40/11) regulated the borders, protective regime and management of national parks, including the establishment of the Public Enterprise “National Parks of Montenegro” (PENP), in charge for the management of 5 national parks (Biogradska Gora, Durmitor, Lake Skadar, Lovćen, and Prokletije). In July 2014 the new Law on National Parks (OG 28/14) was adopted, which revised the boundaries of Durmitor NP, and incorporated the concept of ecosystem services.

3EPR Introduction chapter stated that the national PA network included 5 national parks, and “over 40 other protected areas, which were divided into several categories, such as natural reserves, nature monuments and special natural sites” (hence, there could also be other national PA categories than the above), and that, as of end of 2013, PAs in Montenegro covered 124,972 ha in total, of which 81.34 per cent was within the boundaries of the above 5 national parks (hence, PAs of the other national categories constituted the remaining 18.66 per cent of the PA). As for the recent PA designations, both the 3EPR Executive Summary and Introduction mention the establishment of Prokletije NP in 2009, while section 1.1 dates its proclamation for 2010; a note under table 3.12 further explained that this NP became operational only in 2012. Surprisingly, only the Executive Summary noted the size of Prokletije NP (16,038 ha), this information did not appear elsewhere in the 3EPR.

6CBD NR of Montenegro (dated December 2018) contained an important update concerning the national PA network, informing that in 2014–2017 five new PAs were designated: Monument of Nature Gornjepoljski

The full list of PAs of national categories is available in the online CGIS database of Montenegro (established in 2017), which noted that the national PA network, as of early 2021, included 73 PAs in total: 3 strict nature reserves (IUCN cat. Ia), 5 national parks (IUCN cat. II), 1 special nature reserve (Tivatska solila, officially not categorized), 6 nature parks (IUCN cat. V), 56 nature monuments (IUCN cat. III), and 2 landscapes of exceptional features (IUCN cat. V).

As for PA management, 3EPR section 1.1 noted that the Government adopted required five-year management plans for the period 2011–2015 for 4 NPs (except Prokletije NP as the last designated), in 2013 annual management programmes were in place for all 5 NPs, and that each NP should additionally have a ‘special purpose spatial plan’ (as of February 2014, such were under revision for all NPs). Advisory council of national parks, stipulated by the Law, was not appointed, while the Scientific Council (advising the Management Board of the PENP) was in place. According to section 1.1. each NP had “a director, a protection department (employing rangers), a department for sanitary issues and an administrative department”. However, it should be noted that PENP employed only “about 20 staff responsible for the management and development of the five national parks”, which could probably limit the operational capacities. In Prokletije NP field rangers had not yet been employed by the time of the 3EPR. Furthermore, section 1.1. reported that despite the clear prioritization in the 2010 NBSAP for 2010–2015, no managers had been appointed for other PAs than NPs and several nature monuments.

6CBD NR of Montenegro stated that among 72 PAs (existing in 2018) only 8 PAs (all 5 national parks, 1 out of 4 nature parks, and 2 out of 57 monuments of nature) had management plans but explained also that strict nature reserves and special nature reserves were located within the national parks, hence did not require separate plans. As for 17 PAs exceeding 100 ha in size, only 6 had management plans.

3EPR section 3.2 stated that the management of NPs was funded from own revenues, state budget funds, and foreign grants (table 3.12), where the financial support from the state budget decreased from 44 per cent in 2011 to 30 per cent of the PENP budget in 2012 and concluded that NP revenues were barely sufficient to finance operating costs and basic maintenance works (much less the effective PA management), and that NPs were significantly underinvested.

39 www.prirodainfo.me/Forma
As for Morocco, 2014 EPR Section 9.4, sub-section on the legal framework indicated that procedures for the designation, planning and management of PAs were regulated by the 2010 Law No. 22-07 on Protected Areas, which defined the following 5 national PA categories: “(i) parc national, (ii) parc naturel, (iii) réserve biologique, (iv) réserve naturelle and (v) site naturel”. Furthermore, section 9.4 noted “discrepancies between the Moroccan use of the “parc national” title and the use of the same term (“national park”) by the International Union for Conservation of Nature (IUCN)”, that the IUCN national park definition “does not apply to all of the national parks designated as such in Morocco” (although section 9.4 did not indicate and clarify these discrepancies e.g., by elaborating on different management objective or protective regime of parc national in Morocco, compared to those of the IUCN cat. II).

EPR Section 9.2 on the development and management of PAs and ecological networks noted the presence of 10 national parks in Morocco, established between 1942 and 2008, which encompassed the total area of 771,849 ha (table 9.4 included names, size of area in ha, and the year of designation for all 10 NPs) and emphasized the recent progress in their designation: in 2004 as many as 4 NPs (Al Hoceïma, High Atlas Oriental, Ifrane, and Talassemtane) were designated, soon followed by Khénifiss NP (2006) and Khenifra NP (2008).

According to the Clearing House Mechanism (CHM) on Biodiversity of Morocco, already in 2008, the area encompassed by 10 national parks accounted for 810,402 ha.

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40 www.iucn.org/theme/protected-areas/about/protected-areas-categories/category-ii-national-park
41 http://ma.chm-cbd.net/
42 Le nombre total des aires protégées au Maroc s’est élevé à 10 en 2008 avec la création du Parc National de Khénifra, officiellement créés en vertu de la loi sur les parcs nationaux datant de 1934, dont la superficie globale s’élève à 810,402 ha.
EPR provided no information on PAs designated under the remaining other 4 national PA categories (*parc naturel*, *réserve biologique*, *réserve naturelle*, *site naturel*), neither on their management objectives, nor their size, protective regime and functional zonation. Information on external buffer zones was missing, also in case of NPs.

However, EPR Chapter 5 on the implementation of international agreements and commitments mentioned “Establishment of more than 154 biological and ecological sites and 10 national parks”, while section 9.2 reported that “There is also a network of 160 Sites of Biological and Ecological Interest (SIBEs)” (although did not further clarify this term).

According to the CHM on Biodiversity of Morocco, “the master plan of protected areas, developed in 1996, identified 154 sites of interest Biological and Ecological (SIBE), representing almost all the natural ecosystems of the country, offering the rank for national parks a dozen of them”. Furthermore, the CHM website informs on SIBEs, stating that “The Moroccan study of protected areas has succeeded in developing a network of 09 national parks and 160 biological and ecological sites representative on the bio ecological zones remarkable on ecosystems, with a high concentration of plant species and / or animal endemic rare or threatened, or index of high biodiversity. The total area of these SIBE east of 1.080.000 hectares”, and that 79 terrestrial SIBEs of the continental area encompass in total 840,000 ha, 38 coastal SIBEs cover 205,000 ha, and another 38 wetland SIBEs of the continental area the further 202,000 ha. It should be noted that the above 155 (79 + 38 + 38) SIBEs cover 1,247,000 ha (840,000 + 205,000 + 202,000), which is inconsistent with the previous information on their number (154 or 160) and total area of “1.080.000 hectares”.

2020 VNR by Morocco stated that the network of 154 SIBE encompassed almost 2.5 million ha, and that 29 biological reserves of threatened, extinct and reintroduced species were established. The above implies that since the last actualisation of the above CHM website the size of the SIBE network more than doubled (which is not likely and should therefore possibly be verified under the fourth EPR cycle).

As a result of the self-assessment of the implementation of EPR recommendations carried out in 2020, Morocco stated that “among the 154 SIBE inventoried, 25 are currently classified as protected areas according to Law 22-07, in addition to the 10 already existing national parks, 38 wetlands classified as Ramsar and the four Biosphere Reserves”, however did not inform to which national PA category were the above 25 SIBEs assigned.

As SIBE is not a national PA category mentioned in the 2010 Law No. 22-07 on Protected Areas, the legal status of these areas remains unclear. Therefore, the overall size, legal status of SIBE and their position within the ecological network should possibly be clarified under the fourth EPR cycle.

As for PA management, section 9.2 emphasized that “in many cases, human resources within protected areas are too limited to be able to adequately manage protected area resources on the ground, while, with respect to some protected areas, assignment of protection has been little more than a paper exercise”, and further reported that “The revisions of the protected area system have only recently been undertaken; monitoring of effectiveness and progress has not yet been widely undertaken”, although mentioned the joint project of the High Commission for Water, Forestry and Desertification and the IUCN Centre for

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43 http://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma
44 http://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma/sibe_cont_ter
45 http://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma/sibe_lit
46 http://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma/sibe_cont_hum
47 L’ensemble des divers milieux naturels du patrimoine national a été identifié et participe au réseau des Sites d’Intérêt Biologique et Écologique (154 SIBE) qui s’étend sur près de 2,5 millions d’hectares
48 La création de 29 réserves biologiques des espèces menacées, disparues et réintroduites
49 Parmi les 154 SIBE inventoriés, 25 font l’objet actuellement de classements en aires protégées selon la Loi 22-07, en complément aux 10 parcs nationaux déjà existants, 38 zones humides classées Ramsar et aux quatre Réserves de Biosphères réparties sur le territoire national.
Mediterranean Cooperation, aimed at enhancing the governance and management of Al Hoceïma NP, as well as the 2008 Rapid Assessment and Prioritization of Protected Area Management study conducted in Morocco by the above High Commission. Furthermore, section 9.2 reported that “hunting/poaching is still carried out within several protected sites”.
North Macedonia

3EPR Chapter 11 of North Macedonia (sections 11.4 and 11.6) reported that the 2004 Law on Nature Protection stipulated the establishment of the national ecological network (including ecological corridors), defined the national categories of PAs and determined the procedure for their proclamation, indicated their possible functional zoning pattern (including an outer buffer zone), determined the legal protective regime of different zones, and procedures related to PA management planning.

3EPR section 11.4 stated that the national PA categories in North Macedonia were fully harmonized with IUCN PA management categories (IUCN cat. Ia: strict nature reserve, Ib: wilderness area, II: national park, III: monument of nature, IV: nature park, V: protected landscape, VI: multipurpose area), so that a detailed description of different management objectives and protective regimes in each of the above PA categories was no longer necessary. Section 11.4 provided detailed information on the recent trends in the number and total area encompassed by each PA category in 2012, 2014, 2016, and 2017 (table 11.1), according to which no wilderness areas (IUCN cat. Ia) had been designated until 2017. As of 2017, North Macedonia harboured 2 strict nature reserves (7,714 ha in total), 3 national parks (114,937 ha), 67 monuments of nature (78,939 ha), 12 nature parks (3,086 ha), 1 protected landscape (102 ha), and 1 multipurpose area (24,941 ha). This national PA network (including the above 86 PAs), encompassed, as of 2017, the total area of 229,719 ha (which accounted for 8.93 per cent of the country’s territory), 50.03 per cent of which was in 3 national parks. The geographical distribution of PAs was demonstrated on map 11.1 provided by the Ministry of Environment and Physical Planning (surprisingly, it did not indicate the location of national parks).

As for the progress in designation of new PAs, section 11.4 noted that in 2012–2017 the number of strict nature reserves, national parks, and multipurpose areas did not change, the number of monuments of nature increased (from 57 to 67), while the number of nature parks decreased (from 15 to 12). Furthermore, within the above period, despite the stable number (2) of strict nature reserves, their total area of substantially decreased (from 10,673 to 7,714 ha), while the total area of 3 national parks slightly...
decreased (from 115,713 to 114,937 ha). The above indicated the reduction in size of areas granted the most effective protective regime, which could hardly be compensated by the increase of the total area designated as monuments of nature (from 70,424 to 78,939 ha). Moreover, the significant decrease in the number and total area of protected landscapes of cat. V (from 3 to just 1 site, and from 5,387 ha to merely 102 ha) and a slight decrease of the only 1 site designated as a ‘multipurpose area’ of cat. VI (from 26,923 to 24,941 ha) indicate an obvious negative trend.

Moreover, section 11.4 reported on the ongoing revalorization and reproclamation procedures commenced for PAs which had been designated prior to the enactment of the 2004 Law on Nature Protection in 2005, which were required to be completed by 2011. Despite this legally binding ‘deadline’ for reproclamation, only 6 PAs had been successfully reproclaimed by 2019, including 4 monuments of nature and 2 nature parks. According to the 2018 NBSAP for the period 2018–2023, finalization of the process of PA reproclamation (Action 11.1.2) is due to be completed by 2023, which should therefore possibly be verified under the fourth EPR cycle.

As for PA management, section 11.4 noted that management plans had been adopted for 2 national parks (Galičica, Pelister) and Nature Reserve Ezerani, while draft plans had been prepared for 1 national park (Mavrovo), 6 monuments of nature (Koleshino Waterfalls, Lake Prespa, Lake Tikvesh, Markovki Kuli, Matka Canyon, Smolare), and the Multipurpose Area “Jasen”. However, such draft management plans could not be adopted prior to completion of the reproclamation procedure for the area concerned. Furthermore, section 11.4 reported on the absence of a land cadaster, seriously impeding e.g., the effective enforcement of the PA protective regimes (in a situation where land ownership boundaries cannot be delineated, marked in the field, and referred to). Section 11.4 also noted that only few or no ‘councils of stakeholders’ for PAs (obligatory advisory and consultative bodies involving local communities in management planning procedures) had been established.

2020 VNR by North Macedonia stated that its 86 PAs covered some 9 per cent of the territory of the country and included: 2 strict nature reserves covering 7,787 ha (0.3 per cent of the country’s territory), 3 national parks (114,870 ha, 4.48 per cent), 67 nature monuments (78,967 ha, 3.0 per cent), 12 nature parks (3,045 ha, 0.12 per cent), 1 protected landscape (108 ha, 0.04 per cent), and 1 multi-purpose area (25,305 ha, which was defined to account for “8.9 per cent of the country”, However, if properly calculated, would only be 0.98 per cent). VNR noted the designation in 2019 of 5 new ‘natural rarities’ (however, such are not a PA category).

It should be noted here that the above 2020 VNR data were outdated and presented the situation as of 2016 (while 3EPR also contained the data for 2017, hence, more update than available in the 2020 VNR). Furthermore, surprisingly these outdated numbers (as of 2016) were still presented at the official Ministry of Environment and Physical Planning website even in May 2021.

In the course of the self-assessment in 2020 North Macedonia noted the ongoing procedures for the designation of PAs in Šar Mountains and Osogovo Mountains, as well as the continuation of procedures for the proclamation and re-proclamation of PAs and natural rarities. PA valorisation or revalorisation studies have been prepared for Chengino Kale, Dojran Lake, Osogovo Mountains, Pelister NP, Vodno, Studenchishte Swamp, and Šar Mountains. Furthermore, North Macedonia stated that “Some efforts are put for improving management of protected areas through preparation of several management plans and strengthening capacities of PAs management bodies” and noted the proclamation of 7 ‘natural rarities’ (including old trees, important caves or paleontological sites).

50 www.moepp.gov.mk/?page_id=3413&lang=en
Romania

The draft 3EPR of Romania did not explicitly indicate which legal act provided the basis for PA designation, or defined national PA categories, their management objectives and protective regimes. It could probably be 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 (required due to the fact that Government emergency ordinances are to be issued only in emergency situations).

3EPR section 11.4 presented information on national PA categories in Romania (as of 2019) in table 11.12, listing 4 national PA categories, the number of areas designated under each category, the total area protected, relevant IUCV category, and a short characteristic of areas protected under each PA category (however without specifying the objectives for designation and management of such PAs, their protective regime or functional spatial zonation pattern). No information on external PA buffer zones was provided.

According to table 11.12, as at 2019, PAs of the national categories in Romania included 79 scientific reservations (or scientific reserves) equivalent to IUCN cat. I (most probably Ia) which implies strict protection, encompassing the total area of 100,574 ha; 13 national parks (IUCN cat. II) covering further 315,706 ha; the fourth category constituted 'nature reserves and monuments' (or 'natural reserves and natural monuments', as in table 11.13) including 916 areas, attributed IUCN categories III or IV, jointly stretching over 291,668 ha; and 14 natural parks of IUCN category V, covering 535,122 ha. As such, this totalled for 1,022 PAs of the above 4–5 national categories, encompassing the total area of 1,243,070 ha (thus, 5.214 per cent of the country’s territory, although this calculation can be erroneous if natural parks and e.g., natural reserves or monuments spatially overlap).

The source of data for table 11.12 was the website maintained by the National Agency for Natural Protected Areas (NANPA) of Romania. In Oct. 2020, in the course of draft 3EPR consultations with the
Government of Romania, the Romanian partners expressed the opinion that the above number of 79 scientific reserves was not correct. However, 2018 VNR by Romania noted 79 scientific reserves (100,574 ha), 13 national parks (315,857 ha), 190 natural monuments or feature (18,220 ha), 671 nature reserves (136,537 ha), 14 national parks (737,428 ha), and that the “area of the protected areas on National interest, in relation to the country area, is 7%” (although, the above totalled for 1,308,616 ha, which accounted, if properly calculated, for only 5.489 per cent). It should also be noted that data on PAs differ, depending on the source, e.g., the National Institute of Statistics provided different data on the total size of PAs (table 11.13) than NANPA.

According to the above NANPA website, the more recent data (as of early 2021) were as follows: 32 scientific reservations (16,659 ha in total), 13 national parks (317,419 ha), 916 nature reserves and monuments (292,125 ha), and 16 natural parks (769,373 ha), which would then total for 977 PAs encompassing the total area of 1,395,576 ha (thus, 5.854 per cent of the country’s territory, in case no spatial overlaps between different PA categories occur). The spatial distribution of PAs in Romania is demonstrated on map 11.1 by NANPA in 3EPR section 11.4, also including Natura 2000 sites, Ramsar sites, and UNESCO MAB biosphere reserves.

It should be noted that in case of ‘nature reserves and monuments’ national PA category, the only potentially relevant category would be IUCN cat. III (Natural Monument or Feature), as IUCN cat. IV translates as “Habitat/Species Management Area” and applies to substantially modified areas requiring the implementation of active protection/management measures. Moreover, a note under the next table 11.13 “Areas covered by protected area network, 2012–2019, ha”) noted that “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”. 3EPR section 11.4 did not explain the reasons for such ‘merger’ (e.g., specific statistical purposes, as any other merger of strictly protected scientific reserves of IUCN cat. I with PAs of IUCN cat. III, much less IV, would make little sense). Instead, the next paragraph (following table 11.13) of sub-section “Protected areas”, concerned the achievement of SDG target 14.4 (through the regulation of fish stocks harvesting and preventing over-fishing in the Black Sea), not PAs.

3EPR section 11.4 mentioned that “Since 2011, several protected areas were designated”, but did neither further elaborate on these new designations, nor any spatial extension of existing PAs, changes in the legal protective status, improvements of their functional zonation, or designation of external protective PA buffer zones.

As for PA management, section 11.4 reported that PA management plans were approved in 2016 for 9 national parks and 9 natural parks, and that in 2020 such were in different stages of implementation. Table 11.14 presented the 2019 data by NANPA, according to which 434 nature reserves and nature monuments were operating with PA management plans, while 783 areas of these categories did not have such in place (it should be noted that the above numbers total for 1,217 nature reserves and nature monuments, while NANPA data used for table 11.12 indicated the presence of only 916 nature reserves and nature monuments in 2019); 18 national parks, nature parks and geoparks had PA management plans, while the remaining 11 did not have such plans. Section 11.4 noted that, as at December 2020, 4 management plans were under evaluation, while next 12 were already submitted for approval to the Ministry of Environment, Water and Forests.

Furthermore, section 11.4 included table 11.15 informing on the number and total area of PAs of different categories (including also international designations) managed by different institutions or entities, including NANPA, Romsilva (National Forests Administration), DDBRA (Danube Delta Biosphere Reserve Administration), county councils, and private legal entities. The above probably influenced the presence of valid PA management plans, section 11.4 noted that out of 22 national and natural parks managed by Romsilva, 13 parks had management plans (such were developed with the involvement of consultative
councils, consisting of representatives of local public administration, local agencies, business, forest-owners associations, farmers and NGOs, then subsequently approved by the scientific councils and forwarded to the Ministry of Environment, Water and Forests for its final approval).

According to the NANPA website (accessed in May 2021) 16 scientific reserves, 16 national parks, 282 nature reserves and monuments (hence, much less than 434 in 2019), and 8 natural parks had PA management plans.

Section 11.6 stated that funding for PAs should be coming from the state budget, although in 2012–2019 those managed by Romsilva had solely been funded by Romsilva (deriving from forestry operations revenues), table 11.19 demonstrated an increasing trend in funding for national and natural parks in the above period, while some 10 per cent of PA budgets were funded from own revenues. However, staff costs constituted some 75–80 per cent of the total PA budgets, while remaining 20–25 per cent was used for maintenance and infrastructure. Therefore, the implementation of PA management plans in terms of applying active protection measures was largely dependent on external funding, mostly the EU Structural Funds (as Romsilva was not eligible for funding by the Environment Fund).
According to the 3EPR of Serbia (2015), Chapter 1 (on legal and policymaking framework and its practical implementation), section 1.2 on the legal framework, the 2009 Law on Nature Protection (OG 36/09, 88/10, 91/10) defined 7 national PA categories and their protective regime. Pursuant to this Law, all PAs (also protected species, botanical and zoological collections) are inscribed into the Central Register of Protected Natural Resources, maintained by the Institute for Nature Conservation of Serbia (according to the above Register, these national PA categories are currently named as follows: strict nature reserve, special nature reserve, national park, monument of nature, protected habitat, outstanding natural landscape, and nature park). Furthermore, section 1.2 stated that pursuant to the above Law, PAs were divided into 3 categories of importance, where 1st cat. were PAs “of international or national, i.e., exceptional, significance”, 2nd cat. PAs “of regional, i.e., high, significance”, and 3rd cat. were PAs of local significance. Designation of national parks required the adoption of a special law, moreover the Government had the legal powers to designate PAs of categories 1–2, competent authority of the Autonomous Province could proclaim PAs of 2nd category, while local self-government units could designate PAs of the local significance (cat. 3). Designation of a PA required prior research study, prepared either by the Institute for Nature Conservation of Serbia or Provincial Institute for Nature Conservation. Each PA was required to have a valid management plan and an annual management programme.

In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR of 2019, which confirmed the validity of the above-described designation procedures for 3 PA categories, but surprisingly noted the existence of 8 PA categories (those 7 mentioned in 3EPR, plus “protected landscapes”, although such category is absent in the above Central Register).

53 www.zzps.rs/wp/centralni-registar/?lang=en&script=lat
Neither the 3EPR of 2015 (which did not include a chapter on biodiversity and PAs) nor 6CBD NR of 2019 indicated the number of PAs in each national or IUCN category, only provided their total numbers. 3EPR introduction noted 474 PAs designated in Serbia, encompassing the total area of 531,279 ha (which would then account for 6.01 per cent of the country’s territory), while the more update 6CBD NR reported on only 459 PAs, but stretching over a much larger area of 673,835 ha, “which represents 7.61% of the total area of Serbia” (if properly calculated, this would account for 7.626 per cent of the country’s territory).

However, 6CBD NR stated that “Total surface of protected areas that belong to the one of IUCN categories (I-VI) is 410,798 ha” which implies that PAs compatible with the IUCN categorization constituted only 60.96 per cent of the legally PAs (despite that each of these 7 national PA categories can probably easily be assigned a corresponding IUCN category). Neither 3EPR nor 6CBD NR described the objectives for the designation and management of each national PA category and their protective regime or explained the correspondence of the national PA categories with the IUCN PA management categories.

3EPR Annex III (Key data and indicators available for the review) contained data acquired from the Serbian Environmental Protection Agency, according to which until 2013 (last year of the data series available) there were surprisingly no PAs of IUCN category Ia (Strict Nature Reserve) or Ib (Wilderness Area) in Serbia. Similarly, 6CBD NR indicated no areas of IUCN category I. However, the Central Register of Protected Natural Resources indicates as many as 69 reserves (4 nature reserves, 22 special nature reserves, 40 strict nature reserves, and 3 scientific-research reserves) designated in Serbia since 1950, while the 5CBD NR by Serbia (submitted in 2014) contains table 2 “Number and surfaces of protected areas in Serbia” informing on e.g., the total area these 69 nature reserves (98,954 ha), which, as at 2014, accounted for 18.63 per cent of the total PA (531,279 ha) or 1.12 per cent of the country’s territory. Therefore, the management objectives and protective regime of Serbian reserves, and the compatibility of such with the IUCN PA management category Ia should possibly be clarified under the fourth EPR cycle.

As for the recent progress in PA designation, 6CBD NR stated that “During 2018 protected area increase for 6,416 ha or about 1 %” but did not specify which PAs were established in 2018. As of 2021, the Central Register of Protected Natural Resources informs on the presence of 469 PAs, encompassing 677,950 ha or 7.66 per cent of the country’s territory (if properly calculated, this would account for 7.6725 per cent).

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54 [www.zzps.rs/wp/rezervoati-prirode/?lang=en](http://www.zzps.rs/wp/rezervoati-prirode/?lang=en)
55 [www.zzps.rs/wp/osnovne-informacije/?lang=en&script=lat](http://www.zzps.rs/wp/osnovne-informacije/?lang=en&script=lat)
The 3EPR of Tajikistan comprehensively elaborated on trends in the development and management of PAs. Sections 8.5 and 8.6 reported that the 2011 Law on Specially Protected Natural Areas defined 8 national PA categories, procedures for their designation, management objectives and management planning procedures, their spatial functional zonation and corresponding protective regime and allowed uses of the area.

The 8 national PA categories of Tajikistan were as follows: state nature reserves, state nature parks, nature preserves, state zoological parks, state monuments of nature, ecological-ethnographic zones, dendroparks and botanical gardens, and ‘natural zones of health resorts, therapeutic and recreational zones’. Section 8.5 did not indicate the correspondence between the national PA categories and IUCN PA management categories but described the management regime of the first 3 categories (state nature reserves, state nature parks, nature preserves), considered most effective. At the time of the 3EPR all 8 categories were represented in the PA system.

However, section 8.5 reported that official statistics were not only presenting rough estimates, based on outdated inventories and information (dating back to 1998), but were also not internally harmonized (providing different numbers and information on particular PAs). Furthermore, neither the statistic sources nor official documents followed the above 2011 Law categorization of PAs, and continued to use previously assigned, traditional designations (e.g., national park or historical-natural park instead of state nature park category). Last, but not least, statistics usually overestimated the total PA, probably not taking into account spatial overlaps between different PA categories, e.g., Muzkul Nature Preserve located inside the Tajik National Park (which, according to the 2011 Law categorization, should be referred to as the ‘state nature park’).

Section 8.5 described in detail the case of Tajik National Park, incl. its functional zonation pattern, management plan (also the obvious inconsistency between the conservation objectives set for its strictly
protected core zone and the delimitation of trophy hunting areas within this core zone), as well as its limited operational capacities. Furthermore, section 8.5 explained the difference between the nature reserves (entities with legal status, granted strict protective regime for indefinite period) and ‘nature preserves’. The latter PA category allowed some regulated economic activities and uses of natural resources and could also be designated for a limited period of up to 10 years, while such ‘temporary protective status’ had not always immediately been prolonged. Section 8.5 reported that in 2015 the legal protective status of 12 nature preserves has been extended, for the next 10 years (until 2025). Therefore, the continued presence of nature preserves after 2025 should possibly be verified under the fourth EPR cycle.

Section 8.5 noted the names, year of designation, and area in km² (table 8.2) of 20 PAs: 4 state nature reserves (173,420 ha in total), 3 state nature parks (2,674,420 ha in total), and 13 nature preserves (313,240 ha in total), mentioned 5 botanic gardens (731 ha in total), 13 botanic stations and field nurseries (10,000 ha in total), and 3 tourist-recreational zones (15,300 ha in total). Almost all above 20 PAs were designated in the 20th century, except for Sarikhosor State Nature Park, established in 2005 (thus, well before 2EPR). Furthermore, 26 state monuments of nature were present, however due to their small areas such were not even indicated in statistics. No inventories available at the time of the 3EPR could confirm the presence of 2 other PAs: Medvezhya Roscha nature park (reportedly established in 2004, 1,200 ha) and the planned Serdarinsky nature preserve.

As for PA management, section 8.5 reported that several PAs had valid five-year management plans, often prepared with the assistance of foreign experts, under different externally funded projects. However, the implementation of these plans was largely dependent on the limited operational capacities of PA administration and availability of external funding. In general, the management effectiveness of the four state nature reserves (Dashti-Djum, Romit, Tigrovaya Balka and Zorkul) was much higher than of the other PA categories, as such were managed solely for nature conservation purposes, had valid land use certificates and own administrations granted the legal entity status, as well as received more attention and support from the Government, foreign donors, international organizations and conservation NGOs. The operational capacities of Tajik state nature park were more than insufficient, as its administration had (as of 2011) only 6 4WD vehicles, 2 horses, and 19 field rangers, responsible for law enforcement in the vast and inaccessible park area (2,611,674 ha, thus almost twice the size of the territory of Montenegro). Hence, section 8.5 concluded that “Improving the management effectiveness (in particular by raising the staff operational capacities for the implementation of management plans, where available) of the existing 20 protected areas is much more urgent than establishing any new protected areas”.

As for the new PA designations, section 8.5 stated that the designation of Sangvor state nature park was planned already in 2009, and that the 2014 5CBD NR by Tajikistan stated that “Plans on establishment of new natural parks and expansion of already existing are at the stage of implementation”. Therefore, the progress in the extension of the national PA network should possibly be verified under the fourth EPR cycle.

Although Tajikistan did neither provide the results of its self-assessment of the implementation of the 3EPR recommendations (possibly carried out in 2020), nor indicated any other available sources, in order to update the above information on trends in development and management of PAs, its 6CBD NR56 (submitted in August 2019) has thoroughly been examined. Unfortunately, relevant data available in the above 2019 national report were either outdated (while 3EPR presented official data for 2015) or not internally harmonized (6CBD NR).

According to 6CBD NR, the number of nature preserves (“zakazniks”) increased from 13 to 14. 6CBD NR stated that “in 2018, according to the Resolution of the Government of the Republic of Tajikistan “On increasing the number of spotted and Bukhara deer, wild boars and pheasants” in Dangara district of Khatlon region was opened the reserve “Khutalon”, the territory of which is 6 thousand hectares. At

56 https://chm.cbd.int/database/record?documentID=247273
present, the Khutalon reserve contains more than 500 spotted reindeer. On the initiative of the President of the country, the Leader of the Nation, the respected Emomali Rahmon, more than 70 heads of spotted deer brought from the Russian Federation were released into the reserve to increase the number of spotted deer, as well as to improve the health of offspring. Taking into account wide opportunities, favourable climate and fertility of lands in the future two more reserves will be created in the territory of Dangara district for cultivation of rare animals on the area of 22 thousand hectares”.

The above indicates that the newly designated nature preserve (“zakaznik”) is Khutalon (6,000 ha), and that 2 more “zakazniks” (22,000 ha in total) are to be established “for cultivation of rare animals”, including the re-introduction of rare (Bukhara deer) but also the introduction of non-native (alien) species. The latter concerns the fallow deer (Dama dama), incorrectly referred to as “spotted deer” (Axis axis) which is neither native to Tajikistan nor Russia (but native to Bangladesh, Bhutan, India, Nepal, and Sri Lanka).

6CBD NR also noted that “For the preservation and reproduction of various endemic and endangered species of animals and birds (Bukhara and spotted deer, pheasant, partridge, quail, etc.) created 8 micro-reserves” – which does not yet indicate the implementation of the 3EPR Recommendation 8.2 concerning the need for the effective protection of rare and endangered flora and fauna species listed in the Red Book, as according to 6CBD NR these “micro-reserves” were established for fauna species, while point (a) of Recommendation 8.2 suggested “Designating small state nature reserves aiming at the protection of rare and endangered plant species” (thus, not fauna species).

As for PA management, 6CBD NR stated that “Within the framework of the UNDP/GEF project “Conservation and sustainable use of the Pamir-Alay and Tien Shan Ecosystems for Snow Leopard Protection and Sustainable Community Livelihoods”, measures are being implemented to improve the technical and human resources capacity, equipment and equipment of the staff of the Tajik National Park to improve the protection and management of key habitats of the snow leopard and its hunting objects”. According to available information, the implementation of the above project (US$4,181,370 GEF funding, US$19,610,000 co-financing) commenced in 2016 and shall be completed in 2021. Therefore, the achievements and results of this project should possibly be assessed already under the fourth EPR cycle.

57 www.iucnredlist.org/species/42188/10656554
58 www.iucnredlist.org/species/41783/22158006
Uzbekistan

The 3EPR of Uzbekistan contained the longest, most detailed and most comprehensive assessment of trends in the development and management of PAs among all 15 EPRs analysed in this assessment. Section 11.3 indicated that the 2004 Law on Protected Natural Territories (amended in 2014 and 2017) constituted the legal basis for the designation of PAs, defined 7 national PA categories, as follows: I - state nature reserves, II- complex landscape reserves, III - nature parks, IV - state nature monuments, V- state “zakaznik” reserves, nature nurseries and fishery zones, VI - protected landscapes, recreational zones, water protective zones, coastline belts, sanitary protection zones of water bodies, and surface and groundwater formation zones, VII - territories for the management of individual natural resources. Furthermore, the 2004 Law mentioned several other PA types that did not fall under the above national PA categories (state biosphere reserves, national parks, and inter-State protected natural territories). According to SCEEP, the introduction of a new, revised PA categorization system was planned. The 2004 Law provided also for the establishment of PA external buffer zones (that could be established for state nature reserves, complex landscape reserves, state “zakaznik” reserves, state nature monuments, and “national parks”), while the designation of ecological corridors was not mentioned in this Law.

Section 11.3 described in details the designation procedure, legal status (or the lack thereof), management objectives, internal functional zonation (where applicable) and protective regime for different types of PAs listed under all above 7 national PA categories, as well as for the non-categorized PAs, indicated for each PA category the correspondence with the relevant IUCN category (or the absence thereof), entities or bodies responsible for PA management, the number of PAs, average size, examples of the smallest and largest ones, the total area covered by each PA category and its share in the country’s territory.

As for the correspondence of national PA categories with those of IUCN (indicating management objectives and protective regime), section 11.3 indicated that state nature reserves (national cat. I) corresponded with IUCN cat. Ia (Strict Nature Reserve), complex landscape reserves (nat. cat. II) with IUCN cat. Ib (Wilderness Area), nature parks (nat. cat. III) with IUCN cat. II (National Park), state nature
monuments (nat. cat. IV) with IUCN cat. III (Natural Monument or Feature), state “zakaznik” reserves and species breeding centres (nat. cat. V) and forest management areas (nat. cat. VII) with IUCN cat. IV (Habitat/Species Management Area). Section 11.3 provided names, national and IUCN categories, year of designation, area in ha, percentage share in the country’s territory, and main ecosystems for PAs included into each of 11 PA types under the 7 national categories (table 11.1), the geographical distribution of PAs of 8 selected types in Uzbekistan was presented on map 11.2 prepared by ECE.

As at March 2019, Uzbekistan harboured 7 state nature reserves (covering 188,335 ha in total), 1 complex landscape reserve (628,300 ha, with an external buffer zone of 219,800 ha), 3 nature parks (558,173.6 ha), 10 nature monuments (3,760.1 ha), 12 state “zakaznik” reserves (572,404 ha), 3 nature nurseries / species breeding centres (17,222 ha), water protective zones, coastline belts and sanitary protection zones of water bodies (155,416 ha), 2 state biosphere reserves (111,670.6 ha in total), and 1 “national park” (covering only 32.4 ha). No inter-State protected natural territories were designated before 3EPR, while the data on the total number and area of fishery zones were not available. Furthermore, the national PA network officially included as much as 11,121,567.2 ha (almost 24.78 per cent of the country’s territory) of territories for the management of individual natural resources.

Section 11.3 emphasized that such ‘territories for the management of individual natural resources’ (encompassing roughly one-fourth of the whole country) included almost all state forest fund lands (of which only 28.95 per cent were actual forests, while the remaining 71.05 per cent were, for example, forestry plantations and areas under afforestation works, as well as pastures and open areas potentially suitable for afforestation) and the lands of hunting farms (the latter could hardly be perceived as ‘PAs’ due to obviously conflicting designation purpose). Section 11.3 also explained that, according to the 2004 Law, a ‘national park’ (not even categorized in Uzbekistan) can be “created through the restoration and reproduction of flora”, including the application of complex agrotechnical measures (hence, their establishment does not require the presence of natural areas of high ecological qualities and conservation values as the criteria for designation) which makes this PA category non-compatible with IUCN cat. II ‘National Park’.

As for PA management, section 11.3 indicated that the development of related plans was regulated by the 2012 Order No. 3 of the Chairperson of State Committee for Nature Protection, and reported that several management plans were prepared on the above basis for the period 2014–2018 (for 8 state nature reserves, 2 nature parks, the Lower Amu Darya State Biosphere Reserve, and Jeyran Species Breeding Centre), while, as at March 2019, management plans for the period 2019–2023 were still in preparation. Furthermore, section 11.3 assessed the effectiveness of the implementation of the PA management plans in force, stating that “In general, provisions of PA management plans concerning the application of prescribed nature conservation measures, conducting scientific research and carrying out environmental education and awareness-raising activities are successfully implemented, while the originally planned capacity-building measures (e.g., concerning the construction of facilities, visitor centres, purchase of equipment, etc.) are either abandoned or progressing much more slowly, due to the limited available funding”. Furthermore, section 11.3 emphasized that the recent increase in the total area placed under legal protection was not paired by comparable increase in the number of PA personnel. On the contrary, a negative trend in human resources was observed, as not only the total number of state nature reserve and nature park staff, but in particular the number of their scientific employees decreased between 2011 and 2017 (which must have resulted in further decrease in capacities for e.g., carrying out regular biodiversity monitoring inside PAs).

3EPR section 11.7 noted that, according to the 2004 Law on Protected Natural Territories, the operations of state nature reserves, complex landscape reserves, nature parks, and state biosphere reserves were to be financed by the state budget (the last 3 could also collect entrance fees), while the local government authorities were expected to cover expenses related to the functioning of nature monuments and state “zakaznik” reserves. Section 11.7 further reported on different aspects of PA financing and emphasized that the state budget funding was insufficient to implement effective nature conservation, while the self-generated PA revenues were negligible (unlike the forestry sector).
As for the external PA buffer zones (accordingly to the 2004 Law, expected to be determined simultaneously with the designation of the PA concerned) the information was generally non-available, but section 11.3 reported that buffer zones were not yet in place for e.g., Chatkal, Gissar, Kyzylkum, Nurata, and Zaamin state nature reserves, and that their designation for Chatkal and Zaamin was planned under the UNDP/GEF/SCEEP project “Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity” (2017–2022).

As a result of the self-assessment of the implementation of the 3EPR recommendations carried out in 2020, Uzbekistan noted that (in accordance with 3EPR Recommendation 11.3) external protective buffer zones for 3PAs (Gissar, Kitab, and Surkhan state nature reserves) have already been established (pursuant to 2019 Resolution of the President No. 4247), while the establishment of buffer zones for 4 other PAs (Chatkal, Kyzylkum, Nurata, and Zaamin state nature reserves) was planned for the end of 2020. It should be noted that the above Resolution also stipulated the designation of a buffer zone for the Lower Amu Darya State Biosphere Reserve. Therefore, the progress in the designation of external buffer zones for the above 5 PAs should possibly be assessed under the fourth EPR cycle.

Section 11.3 reported on the recent changes of the national PA network, however within the 3EPR reporting period such mostly concerned the already existing PAs: Saygachi complex landscape reserve replaced in 2016 the former Saygachi state “zakaznik” reserve (hence, the protective status of the area significantly increased), Ugam-Chatkali state biosphere reserve replaced in 2018 the former Ugam-Chatkali state “zakaznik” reserve, and Zarafshan nature park replaced in 2018 the former Zarafshan state nature reserve (in this last case the protective status decreased). Newly designated PAs were the tiny Durmen “national park” (2014), and the Lower Amu Darya state biosphere reserve (2011), the latter included a much smaller former Badai-Tugai state nature reserve. As at March 2019, works on the designation of Saykhun state “zakaznik” reserve in Syrdarya Oblast were ongoing.

1.5. Trends in development and management of ecological networks

Methodological remarks

First and foremost, it should be emphasized that this EPR section should somehow continue and supplement the previous EPR section concerning PAs, as the term ‘ecological network’ in the EPR understanding, context and practice is different from its commonly used definitions, e.g., “Ecological networks are representations of the interactions that occur between species within a community”. In the EPR context, ‘ecological network’ is the conservation planning term, linked to the concept of connectivity in ecology, in particular the structural and functional connectivity of the interrelated ecosystems at the landscape level, following the approach acknowledged by the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) towards the achievement of CBD Aichi Target 7.

The establishment, management and further development of an ecological network (regardless of whether at the local, regional, national or transnational scale) is a highly recommended measure and important part of ‘country response’ to prevent and mitigate the adverse effects of the ongoing fragmentation of natural ecosystems and habitats.

Moreover, CBD Aichi Biodiversity Target 11 (further as ABT11) emphasises the requirement for conserving areas of particular importance for biodiversity and ecosystem services “through effectively and equitably managed, ecologically representative and well connected systems”, which means that the national

60. www.nature.com/subjects/ecological-networks
61. UNEP/CBD/SBSTTA/15/13 “As sustainability can only be achieved at an appropriate spatial and temporal context, the landscape level is arguably the most important spatial scale to improve and assess the sustainable management of agricultural and forest ecosystems.” www.cbd.int/doc/meetings/sbstta/sbstta-15/official/sbstta-15-13-en.pdf
ecological network should include at least the best preserved areas of all main natural ecosystems representative of the particular country, where core areas should be linked by connecting ecological corridors in order to form a consistent network, and where all elements of this network are not only assigned an appropriate legal protective status, but are also effectively managed.

Furthermore, this EPR section should duly consider both the national and international ecological networks.

In line with CBD Article 8, the national ecological network should be understood as the national “system of protected areas or areas where special measures need to be taken to conserve biological diversity”.

Hence, PAs legally designated in a particular country in accordance with its national legislation, under resulting ‘national PA categories’ (described in the previous EPR section on the development and management of PAs) constitute an important part of its national ecological network.

Furthermore, some areas can become legally protected upon the integration of the provisions of the international law into the national legislation, e.g., the transposition of the EU environmental acquis in the EU Member States, which would then result in the simultaneous presence of the 2 overlapping legally designated PA networks within one country, whose SPAs and SACs are its national contribution to the larger, transnational Natura 2000 network (see also the next sub-section 1.6.1. of this assessment, concerning the legal framework).

Therefore, for the EU Member States, this EPR section should briefly describe the national part of the EU Natura 2000 ecological network, including Special Protection Areas (SPAs) under the Birds Directive, and Special Areas of Conservation (SACs) designated by the particular Member State (MS) under the Habitats Directive.

In case of SACs a 3-step procedure is required: relevant sites are identified on the basis assessments of habitat types and species present in MS’s territory and communicated to the Commission (by using Standard Data Forms, SDFs), the proposed national lists are then assessed during the seminar concerning the relevant bio-geographical region for the adoption of a corresponding list of Sites of Community Importance (SCIs) for each of the 9 regions determined by the Habitats Directive (Alpine, Atlantic, Black Sea, Boreal, Continental, Macaronesian, Mediterranean, Pannonian, and Steppic), in order to ensure the application of a consistent approach across each MS. Upon the adoption of SCI lists the MS is required to designate its SCIs as SACs (no later than within 6 years since the SCI list adoption) as well as ensure the favourable conservation status of these sites (also by undertaking necessary management or restoration measures). The Natura 2000 sites can further be explored with the use of the Natura 2000 Network Viewer. It should be emphasized, that Natura 2000 sites should preferably also be “well connected” to make Natura 2000 an efficient and coherent ecological network.

A specific ecological network can also emerge at the transnational scale in a situation when the PAs legally designated in a particular country are located near or directly adjacent to PAs designated in a neighbouring country/countries. Such transboundary complexes of PAs (often referred to as “transboundary protected areas” – TBPAs) allow the application of the ecosystem approach and harmonization of biodiversity conservation initiatives at a larger spatial scale, which is particularly important when the designation of large PAs by particular country is not feasible, while concerted efforts of two or more partners can bring a spectacular success for biodiversity conservation.

62 www.cbd.int/convention/articles/?a=cbd-08
Establishment of TBPAs is recommended under Goal 1.366 of the CBD Programme of Work on Protected Areas (PoWPA). Most recently, the United Nations General Assembly at its 75th session held on 16 April 2021 adopted resolution A/RES/75/271 “Nature knows no borders: transboundary cooperation – a key factor for biodiversity conservation, restoration and sustainable use”,67 that “encourages Member States to maintain and enhance connectivity of habitats, including but not limited to those of protected species and those relevant for the provision of ecosystem services, including through increasing the establishment of transboundary protected areas, as appropriate, and ecological corridors based on the best available scientific data, in accordance with international law and national legislation, and to promote initiatives to strengthen the already existing ones and improve their effective management and other effective area-based conservation measures, thereby contributing to the maintenance of their functioning”.

It should be noted that CBD Article 8 also mentions areas other than already legally protected, where special conservation measures should be applied. Such areas can be identified in the course of implementation of relevant MEAs (this is why this sub-section of EPR chapter on biodiversity and PAs always partly overlaps with the EPR chapter on the implementation of international agreements and commitments).

Most relevant for EPRs would be the international ecological networks resulting from the following MEAs:

- the Convention on Wetlands of International Importance Especially as Waterfowl Habitat68 (Ramsar, 1971), which requires the designation of Wetlands of International Importance (commonly known as Ramsar68 sites)
- the Convention concerning the Protection of the World Cultural and Natural Heritage70 (Paris, 1972), which requires the protection of the World Heritage sites / properties71 (relevant here are those nominated under ‘natural’ and ‘mixed’ criteria categories, see also methodological remarks to SDG Target 11.4 Strengthen efforts to protect and safeguard the world’s cultural and natural heritage)
- the Convention on the Conservation of European Wildlife and Natural Habitats72 (Bern, 1979), as the basis for the designation of Areas of Special Conservation Interest (ASCIs) constituting the Emerald Network73 in the non-EU countries, but compatible with the Natura 2000 network (which is perceived as the EU’s contribution to the Emerald Network), including sites in e.g., Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, the Republic of Moldova, Montenegro, North Macedonia, Serbia, and Ukraine. The proposed, the officially nominated candidate Emerald Network sites, and the officially adopted ones can further be explored with the use of the Emerald Network Viewer74 (compatible with the Natura 2000 viewer).

However, it should be emphasized, that MEAs do not necessarily provide for the legal protection “at the international level” for sites designated as part of the above international ecological networks, even if MEAs explicitly require the conservation or active protection of sites included into such resulting ecological networks. In most cases, such measures always remain within the scope of responsibilities of a particular country, being Party to MEA. In other words, international designation does not mean any additional legal protection other than provided by the national legislation of the respective country.

For example, the above mentioned ASCIs of the Emerald Network are designated on the basis of Recommendation No. 16 (1989)75 of the Standing Committee of the Convention on the Conservation of

66 www.cbd.int/protected/pow/learnmore/goal13/
69 https://rsis.ramsar.org/
70 https://whc.unesco.org/en/conventiontext/
71 https://whc.unesco.org/en/list/
72 www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680078aff
73 www.coe.int/en/web/bern-convention/emerald-network
74 https://emerald.eea.europa.eu/
75 https://search.coe.int/bern-convention/Pages/result_details.aspx?Objectid=0900001680746c25
European Wildlife and Natural Habitats, addressed to the Contracting Parties (hence, a non-binding recommendation, which effects for the protection of the sites concerned depend on whether the Contracting Parties ensure such legal protection by designating a PA of a respective national category, pursuant to its legislation in force).

Similarly, although the Convention on Wetlands of International Importance Especially as Waterfowl Habitat obliges its Contracting Parties to designate at least one wetland to be included in the List of Ramsar sites (Article 2) as well as establish nature reserves on wetlands, regardless whether included in the above List or not (Article 4), "the inclusion of a wetland in the List does not prejudice the exclusive sovereign rights of the Contracting Party in whose territory the wetland is situated" (Article 2). The above explicitly indicates that in order to fulfil "its international responsibilities for the conservation, management and wise use of migratory stocks of waterfowl" (Article 2) the Party has to ensure the legal protection of the site accordingly to its own national legislation in force, e.g., by designating a nature reserve (as stipulated by Article 4). In other words, a Ramsar site is not protected unless provided a legal protective status under a relevant national PA category.

Nevertheless, Parties to MEAs are usually obliged to ensure the adequate protection and/or undertake special measures, while several MEAs include mechanisms to monitor the situation and encourage Parties to act, an example could be the ‘List of World Heritage in Danger’ maintained by the intergovernmental World Heritage Committee. According to the 1972 Convention concerning the Protection of the World Cultural and Natural Heritage the duty of ensuring the protection and conservation of World Heritage properties situated on the territory of the State Party belongs primarily to that State (Article 4). However, although fully respecting the sovereignty of the States concerned, the protection of such sites “is the duty of the international community as a whole”, so that the respective State can request the help of the other States Parties (Article 6) and can be granted financial assistance by the World Heritage Fund (Article 15). Furthermore, the World Heritage Committee can also directly request governments concerned to undertake adequate conservation actions in order to prevent or mitigate threats which could negatively affect the integrity of particular sites of Outstanding Universal Value. The above can probably be interpreted as legal protection “at the international level”.

Another important global ecological network is the World Network of Biosphere Reserves, designated under the UNESCO Man and the Biosphere Programme (MAB), as at early 2021 including already 714 biosphere reserves in 129 countries. Since the launch of the UNESCO MAB Programme (1971), the designation of a biosphere reserve requires the presence of a PA granted strict protective regime (this is why biosphere reserves designated in the 1970s and 1980s usually covered remotely located and non-populated areas, strictly protected solely for the conservation and scientific research purposes). Later the biosphere reserve concept evolved, but the presence of a strictly protected ‘core zone’ (hence, a nationally designated PA) is still required, while the 2 other BR functional zones (‘buffer zone/s’ and ‘transition area’) do not need to be designated as PAs. However, the 1995 Seville Strategy for Biosphere Reserves stipulates the presence of resident communities in the BR’s transition area, which is not allowed e.g., by the national legislation of Kazakhstan. As for today, in many countries such ‘old-generation’ UNESCO MAB biosphere reserves (designated prior to the adoption of the 1995 Seville Strategy) remain strictly protected (only scientific research is conditionally allowed there) which makes these areas non-compatible with the current MAB criteria. In such cases, such ‘outdated’ biosphere reserves either have to be complemented by adding buffer and transition zones or could be withdrawn/degazetted (like in the case of 4 former MAB biosphere reserves in Bulgaria, withdrawn in 2020).

It should also be reminded, that in some EPR countries a ‘biosphere reserve’ is one of the national PA categories (hence, biosphere reserves constitute part of the national PA network), although the compatibility of these biosphere reserves with the modern MAB concept depends on their functional zonation and protective regime. For instance, in Ukraine a ‘biosphere reserve’ is a national PA category.

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76 https://en.unesco.org/biosphere/wnbr
with assigned strict protective regime (corresponding to IUCN cat. Ia), thus non-compatible with the MAB biosphere concept.

Other relevant global conservation designations (despite that unofficial, not based on any MEA) which can help to identify priority areas for the designation of new PAs, and undertaking protective measures are the **Key Biodiversity Areas** (KBAs), mentioned in the definition of SDG indicator 15.1.277 (Proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs, by ecosystem type), including e.g., **Important Bird and Biodiversity Areas** (IBAs)78 identified by BirdLife International, Alliance for Zero Extinction (AZE) sites,79 IPAs80 by Plantlife (currently the database includes IPAs in e.g., Albania, Armenia, Belarus, Bulgaria, North Macedonia, Montenegro, Morocco, Romania, and Ukraine), and similar initiatives targeted at the conservation of species of other taxonomic groups (e.g., Prime Butterfly Areas).

As for **comparisons** of the progress in PA network development between countries, neither the number of PAs nor the total spatial extent of areas under the national PA system in a particular country can serve as indicators, as a single PA located in one of the larger EPR countries can be bigger in size than the total territory of a smaller EPR country.

For example, Govi Gurvan Saikhan National Park (IUCN cat. II, 2,697,170.84 ha) in Mongolia encompasses a bigger area than the territory of North Macedonia, the Great Gobi Strictly Protected Area (IUCN cat. I, 5,565,642 ha) in Mongolia is bigger in size than the territory of Bosnia and Herzegovina, while the Southern Kazakhstan State Preserved Zone (in Kazakhstan) covers 6,258,000 ha, which is equal to almost 90 per cent of the territory of Georgia.

Therefore, an indicator commonly used for comparisons between countries is the per cent share of PAs in the territory of particular country, which also serves for the assessment of progress towards the achievement of ABT11, which set the minimum threshold for the conservation of “at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services” by 2020.

However, the above ‘per cent share’ indicator could also be misleading, taking into account that even its high value does not necessarily indicate the presence of a well-developed and coherent ecological network. For example, according to the 3EPR of Tajikistan, the total surface of its PAs accounted, as of late 2016, for as much as 21.58 per cent of the country’s territory (which was well over the 10 per cent threshold recommended by the IUCN, and 17 per cent set by ABT11). However, the above impressive value of the ‘per cent share’ indicator has in fact been achieved well before the adoption of the 2010 CBD Strategic Plan for Biodiversity 2011–2020, through the designation (in 1992) and significant extension (in 2001) of the area of only one PA, the aforementioned Tajik national park (2,611,674 ha), which alone encompassed over 18 per cent of the territory of Tajikistan (and constituted almost 85 per cent of areas included in its national ecological network).

Moreover, the above ‘per cent share’ indicator cannot indicate whether the ecological network of a country

- is “**ecologically representative**” (by covering at least the best-preserved areas of all main natural ecosystems representative of the particular country)
- includes the habitats, main refuges and mainstays of rare and threatened plant, fungi, and animal species protected by the national legislation of the particular country
- is “**well connected**”, i.e. most valuable core areas of this ecological network are linked by connecting ecological corridors, thus forming a truly consistent network
- is “**effectively and equitably managed**”

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78 http://datazone.birdlife.org/home
79 https://zeroextinction.org/site-identification/2018-global-aze-map/
80 www.plantlifeipa.org/home
which should therefore be thoroughly assessed by the appointed expert in the course of the EPR.

**Coverage of ecological networks subject in 3EPR reports**

Separate sections on the development and management of ecological networks were present in relevant 3EPR chapters of most countries, while additional information was always available in 3EPR chapters concerning the implementation of international agreements (on e.g., the Emerald network, Ramsar sites, World Heritage properties). In the 3EPR of Belarus, Bulgaria, Georgia, the Republic of Moldova, Morocco, and Tajikistan the same section covered nationally designated PAs and ecological networks. As for Montenegro and Serbia (which 3EPRs did not contain a chapter on biodiversity and PAs) some basic information on ecological networks was available in other 3EPR chapters.
Trends in development and management of ecological networks, and 3EPR country performance

Albania

In case of Albania, although 3EPR Executive Summary and section 9.6 stated that “Albania still does not have a national ecological network”, the Executive Summary and section 9.5 noted that “The country has 800 protected areas covering a surface of 477,566 ha or 16.61 per cent of the whole national territory” and that “Since 2012, Albania has increased protected areas by 1.61 per cent” (of the total territory of the country). Sections 4.2 and 9.5 noted that the above per cent share included 16.1 per cent of inland and coastal areas and 0.5 per cent of marine area. According to the 2016 NBSAP the national system of PAs was planned to be extended to 17 per cent of the total surface of land and internal waters and to 6 per cent of the coastal and marine areas.

Section 9.5 included) the map presenting the geographical distribution of PAs of different national categories, which indicated that the ecological network of Albania was not coherent, despite that in some regions several PAs were adjacent to each other, ecological corridors linking different regions of the country were largely missing. On the other hand, this map indicated high potential for transboundary ecological connectivity, due to the presence of several larger PA complexes stretching along state borders with the neighbouring countries.

6CBD NR by Albania (of May 2019) stated that “The total number of protected areas is 798 (including nature monuments and one marine protected area), covering an area of more than 523 thousand hectares in the country”, and that “Actually Protected Areas in Albania cover 18.5 % of the country’s territory or 526,334 thousand hectares. The following protected areas have been designated each year, according to the annual plan of the Ministry of Tourism and Environment, as follows:” (no data followed the above
sentence, but the 526,334 ha number was also referred to on 6CBD NR). As of early 2021, the online database\(^{81}\) on PAs indicated in 6CBD NR was not yet functional (it provided information only on 2 PAs: Shebenik – Jablanice National Park, and Buna River Protected Landscape), although 6CBD NR stated that “Biodiversity National Network of Albania (BIONNA) database has been finalized in 2018 within the Natura 2000 project”.

An Annex to 6CBD NR contained a map of the national PA network, as of November 2018, and a table indicating names, national PA category and relevant IUCN category, area in ha, and Government Decree on the designation of 58 PAs (probably not counting smaller nature monuments), according to which Albania had 2 strict nature reserves (12,062.22 ha in total), 14 national parks (245,863.85 ha), 7 natural monuments (3,918.25 ha), 1 nature park (25,590.32 ha), 24 managed nature reserves (124,412.23 ha), 6 protected landscapes (97,256.78 ha), and 4 ‘protected areas of natural resources’ (18,230.74 ha). The table in 6CBD NR end with “total 526334,38”, however, if properly calculated, the total area of the above PAs would account for as much as 527,334.39 ha.

6CBD NR mentioned the planned extension of National Park of Tomorri Mountain, proclamation of Kraste – Verion as Protected Landscape, and designation of Zagori area as Nature Park (all above expected in 2018, although this information was provided in 2019 CBD NR), and stated that “The Ministry of Tourism and Environment is working on the extension of Nature Monument of “Syri i Kaltër” and its designation as Nature Park of “Syri i Kaltër”.

In 2020 Albania provided additional information on its progress in achievement of CBD Aichi Target 11, indicating that the total share of 53 PAs in the country territory could account either for 17.56 per cent (504,826.30 ha gazetted) or for as much as 18.24 per cent (524,322.70 ha mapped), hence these disparities accounted for as much as almost 20 thousand ha (19,496.4 ha) or 0.68 per cent of the territory of Albania. Nevertheless, even taking into account the smaller (gazetted) value, according to ECE EPR team calculation the share of terrestrial PAs in the territory accounted, as of 2020, already for no less than 17.08 per cent of the land area of Albania, which therefore succeeded to reach at least one of the two threshold values of the AT11.

Out of the gazetted area 491,065.10 ha (97 per cent) were terrestrial (including inland waters) and 13,261.20 ha (3 per cent) marine areas. The national PA network included 2 strict nature reserves (IUCN cat. I), 14 national parks (IUCN cat. II) 3 nature monuments (IUCN cat. III), 24 managed nature reserves / nature parks (IUCN cat. IV), 6 protected landscapes (IUCN cat. V), and 4 PAs of managed resources (IUCN cat. VI).

However, also in the light of data from the 6CBD NR, the “mapped area” seems to be more accurate, indicating 12,062.22 ha in 2 strict nature reserves, 245,801.58 ha in 14 national parks, 1,968.84 ha in 3 nature monuments, 149,002.54 ha in 24 managed nature reserves and 1 nature park, 97,256.78 ha in 6 protected landscapes, and 18,230.74 ha in 4 PAs of managed resources.

The above indicates, that since 2018 the total area of national parks slightly decreased (from 245,863.85 ha indicated in 6CBD NR), a rapid decrease in the number and total area of natural/nature monuments (from 7 natural monuments of the total area of 3,918.25 ha indicated in 6CBD NR to 3 covering 1,968.84 ha, hence by 50 per cent), and a decrease by 1 PA and 1,000.01 ha in PAs of IUCN cat. IV (managed nature reserves / nature parks). It also indicates that PA extensions and designations planned for 2018 (indicated in 6CBD NR) were not implemented. The above expected changes in the national PA network should possibly be verified under the fourth EPR cycle.

The extremely short 3EPR section 9.6 (containing only 9 sentences) on ecological networks stated that the Albanian proposal concerning sites for the Emerald Network (25 sites, according to section 9.8), pending adoption by the Government, was expected to be completed in late 2017 for its re-submission, that Albania

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\(^{81}\) [www.bionna.al/P_Areas.aspx](www.bionna.al/P_Areas.aspx)
had 4 Ramsar sites, and that “Since 2015, Albania is implementing Natura 2000. Albania is still in the initial phase and there are still no designated networks identified or adopted” (which is a misleading information, as Albania is not yet, as of 2021, the EU Member State, thus cannot officially propose sites for potential SCIs/SACs, or designate SPAs still prior to its successful accession). According to 3EPR chapter 4 on the implementation of international agreements and commitments, the NBSAP for 2016–2020 aimed at the identification of 50 per cent of potential SCIs by/in 2017, and the completion of this assessment procedure in 2020 (which should possibly be verified under the fourth EPR cycle).

According to the Council of Europe, as of December 2020, Albania officially nominated 25 potential ASCIs.

3EPR chapter 4 on the implementation of international agreements and commitments provided more details concerning the contribution by Albanian to the international ecological networks, informing that the 4 Ramsar sites designated in Albania together encompassed the total area of 98,181 ha, and provided dates of their designation (according to which Albanian Prespa Lakes site was designated in 2013, hence within the 3EPR reporting period). Furthermore, chapter 4 noted the adoption of management plans for all above 4 Ramsar sites in 2011–2015 (except for the River Buna section of the Lake Shkodra/Shkodër and River Buna site, which was pending adoption, as of early 2017). Chapter 4 also stated that “The designation of the most important wetlands in Albania as Important Bird Areas (IBAs) also provides them legal protection”, although did not further explain whether and how the national legislation of Albania provides for the legal protection of IBAs. Chapter 4 reported on the main challenges and priorities for the implementation of the Ramsar Convention, which included completing the management plans for all Ramsar sites, funding the implementation of Ramsar sites management plans, improving law enforcement, staff capacity building of staff, and awareness-raising of local entities and communities.

An Annex to 6CBD NR contained a map of the Ramsar sites network of Albania. As of early 2021, according to RSIS, the number and total area of Ramsar sites in Albania did not change.

Chapter 4 also noted the inclusion in 2017 of Albanian sites into the World Heritage transnational ‘natural’ property Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe, on the 2011 submission concerning the extension of the WH ‘mixed’ property Natural and Cultural Heritage of the Ohrid Region to include the Albanian part (approved in 2019), and the 2014 inscription of the Ancient City of Apollonia ‘mixed’ site to the national Tentative List. Hence, the progress in official nomination of the above site should possibly be verified under the future fourth EPR cycle.

Furthermore, chapter 4 noted the designation in 2014 of the Ohrid-Prespa Transboundary Biosphere Reserve (shared with North Macedonia), and on the identification of 11 sites of “international importance regarding water birds” (incl. 4 designated as IBAs, having management plans), and 15 sites of national interest (of which 6 had management plans in place), although chapter 4 did not explain their legal protective status (if any).

82 https://rsis.ramsar.org/ris/2151
83 https://rsis.ramsar.org/ris/1598
84 https://whc.unesco.org/en/list/1133
86 https://whc.unesco.org/en/tentativelists/5885/
87 https://en.unesco.org/biosphere/eu-na/ohrid-prespa
Belarus

According to the Introduction chapter of the 3EPR of Belarus, within the reporting period the per cent share of the total area of PAs in the country’s territory initially decreased (from 8.0 per cent in 2005 to 7.7 in 2009, and 7.6 in 2012), but later increased, from 7.8 in 2013 to 8.2 in 2014, and 8.7 in 2015 (table I.3). However, if the area of the Polessye State Radiation and Ecological Reserve (216,093 ha) is included, the size of the total PA would then increase from 1,808,600 ha (indicated in table I.2) to 2,024,693 ha, and the PA coverage would then reach 9.75 per cent of the country’s territory. Despite the above, section 7.2 stated that “Belarus has not yet established a national ecological network” (probably meaning that the existing PAs of different national categories were not linked by any legally protected ecological corridors, which could then form a ‘well connected’ ecological network in the understanding of ABT11).

Due to the fact that in 2020 Belarus did not undertake the self-assessment of its progress in the implementation of the 3EPR recommendations, and did not provide any additional information, in order to update the above data on trends in development and management of ecological networks, its 6CBD NR\(^88\) (published in December 2018) and publicly available statistical data have thoroughly been examined.

According to official statistics,\(^89\) the total area of the national PA network temporarily decreased, from 1,825,600 ha (8.79 per cent of the country’s territory) in 2015 to 1,789,700 ha (8.66 per cent) in 2016, but later constantly increased, reaching 1,870,100 ha (9.008 per cent) in 2019. The more detailed statistics indicate that the area of the only nature reserve (Berezinsky Biosphere Reserve) increased from 85,200 ha in 2018 to 86,100 ha in 2019, the total area of 4 national parks decreased from 390,300 ha in 2016 to 389,500 ha in 2019, the total area of ‘preserves’ (“zakazniki”) increased from 1,309,200 ha in 2016 to

\(^88\) https://chm.cbd.int/database/record?documentID=241352

1,381,100 ha in 2019, while the total area of nature monuments significantly decreased, from 17,300 ha in 2012 to 15,400 ha in 2013 (number indicated in 3EPR) and only 13,500 ha in 2019.

In result, as of 2019, the above period the national PA network of Belarus encompassed 86,100 ha in the nature reserve (Berezinsky Biosphere Reserve), 389,500 ha in 4 national parks, 1,381,100 ha in “zakaznik” preserves, and 15,400 ha in nature monuments. Should the area of Polessye State Radiation and Ecological Reserve (216,093 ha) be added, the total area under protection, as of 2019, would then account for 2,086,193 ha (or 10.05 per cent of the country’s territory).

6CBD NR includes a map of the national PA network of Belarus, as of 1 January 2017.

3EPR section 7.5 noted several documents, concerning the planned extension of the national PA network:

- the National Strategy for Development and Management of the System of Specially Protected Natural Areas until 1 January 2015, approved by the 2007 Resolution of the Council of Ministers No. 1920
- the State Programme for Development of the System of Specially Protected Natural Areas for 2008–2014, approved by the 2008 Presidential Decree No. 146
- the State Programme for Development of the System of Specially Protected Natural Areas for 2015–2019, approved by the 2014 Presidential Decree No. 367
- the National Strategy for Development of the System of Specially Protected Natural Areas until 1 January 2030, approved by the 2014 Resolution of the Council of Ministers No. 649
- the Scheme for the rational location of republican specially protected natural areas until 1 January 2025, approved by the 2014 Resolution of the Council of Ministers No. 649

Accordingly to the above “Scheme for the rational location of republican specially protected natural areas until 1 January 2025", 3 new national preserves (Bely Mokh, Spory, and Zhada) were to be designated, 2 existing national preserves included into other PAs (Svislochsko-Berezinsky preserve into the planned new Svislochsko-Berezinsky National Park, and Morochno local preserve into the Morochno National Preserve), while the borders of other 18 preserves (Babinovichsky, Buslovka, Falichsky Mokh, Korytensky Mokh, Kozyansky, Krasny Bor, Kupalovsky, Lipichanskyaya pushcha, Luninsky, Olmanskiiy bolota, Ostrova Duleby, Podsady, Pribuzhskoye Polessye, Servech, Staritsa, Strelsky, Stronga, and Vydritsa) were to be modified (possibly extended?).

Therefore, the progress in the implementation of the above 2014 National Strategy (until 1 January 2030) and 2014 Scheme (until 1 January 2025) in terms of designation of new PAs, further extension of the national PA system should possibly be assessed under the fourth EPR cycle.

3EPR section 7.2 on PAs and ecological networks stated that the 1992 Law on Environmental Protection provided a legal framework for the development of the national ecological network, and included 2 detailed maps, of ‘specially protected natural areas’ (map 7.1) showing both PAs of national categories and sites bearing international designations (e.g., Ramsar sites, World Heritage sites, MAB biosphere reserves, IBAs and IPAs), and of the draft concept of the national ecological network (map 7.2), incl. core areas (of European, national, and regional significance), linking ecological corridors, external protective zones, and planned PAs.

Section 7.2 stated that “The draft scheme of the national ecological network was developed by the Ministry of Natural Resources and Environmental Protection in cooperation with the National Academy of Sciences of Belarus, oblast executive and administrative authorities, and other stakeholders, including governmental entities and NGOs”. Furthermore, a note under the map of the proposed ecological network noted that it had been “prepared in the framework of the activity No. 14 of the State Programme for Development of the System of Specially Protected Natural Areas for 2008–2014”.

According to section 7.2, more detailed requirements and criteria for the selection of areas suitable for inclusion into the ecological network were set by the 2010 Resolution of the Council of Ministers No. 1733
(revised by the 2014 Resolution of the Council of Ministers No. 1066), while related research was expected to be carried out in 2016, pursuant to 2014 Decree of the President No. 367, concerning the State Programme for Development of the System of Specially Protected Natural Areas for 2015–2019.

6CBD NR provided a short assessment of the ecological representativeness of the national PA network, according to which PAs cover 58 per cent of forest ecosystems (which encompass 46.3 per cent of the country’s territory), 17 per cent of natural grassland ecosystems (4 per cent of the country), 20 per cent of wetland ecosystems (3.9 per cent of the country), and 5 per cent of aquatic ecosystems (2.2 per cent of the country), as well as a short evaluation of the PA effectiveness.

6CBD NR stated that the National Ecological Network had been developed and adopted (Decree of the President of the Republic of Belarus of 13 March 2018 No. 108), including 93 objects encompassing the total area of 3.37 million hectares (16.2 per cent of the country’s territory). The above-mentioned ecological network includes 52 core areas (14 of the European, 18 of national and 20 of regional significance), encompassing a total area of 1.64 million ha, linked by 34 ecological corridors (6 of the European, 19 of national, and 7 of regional significance) with a total area of 1.45 million ha, and 7 buffer zones with a total area of 0.26 million ha. The map of the National Ecological Network of Belarus is provided on 6CBD NR.

According to 6CBD NR, the above ecological network “is a system of natural-territorial complexes with special regimes of nature management” and that “The scheme of the national ecological network is taken into account in the development of projects and land management schemes, urban planning projects, sectoral schemes for the location and development of production and transport facilities and engineering infrastructure, land reclamation projects, projects of water protection zones and coastal strips of water bodies, the republican integrated scheme for the allocation of fishing grounds, forest management projects, projects of hunting management and planning of recreational areas”.

However, 6CBD NR did not further elaborate on e.g., the legal status and protective regimes (“special regimes of nature management”) of areas included into ecological corridors or buffer zones, which should possibly be clarified under the fourth EPR cycle.

6CBD NR noted the establishment of a transboundary PA “Augshdaugava-Braslavskie lakes” (Belarus-Latvia), and the agreement signed in October 2017 with the Ministry of Natural Resources and Environment of the Russian Federation on the establishment of a transboundary PA “Zapovednoe Poozerye”, including republican reserves “Osveisky” and “Krasny Bor” (Belarus) and the National Park “Sebezhsky” (Russian Federation).

As for international designations, 3EPR section 7.2 noted the approval in 2014 by the Standing Committee of the Bern Convention of 16 PAs (Berezinsky Biosphere Reserve, 4 national parks and 11 national preserves) for inclusion into the Emerald Network, and submission in 2015 of the proposal concerning further 64 areas as potential ASCIs (which approval shall possibly be verified under the fourth EPR cycle), and on the identification of 51 new IBAs in 2015 (in addition to 20 IBAs known in 2005), incl. 12 sites legally protected, 33 partly protected, and 6 of no protective status. No new IPAs were identified since 2005, 10 previously identified included 2 non-protected, 4 of a higher and 4 of a lower protective status (all 8 located within PAs, but none having effective site management plans for plant conservation in place), most IPAs were threatened either by deforestation or intensified forest management, and some other pressures.

According to the Council of Europe, as of December 2020, 155 ASCIs have officially been adopted in Belarus (encompassing the total area of 2,306,470.2 ha), while further 7 potential ASCIs (covering

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90 разработана и утверждена Национальная экологическая сеть, включающая 93 объекта общей площадью 3,37 млн. га (16,2 % территории страны);

91 представляет собой систему природно-территориальных комплексов со специальными режимами природопользования.
97,368.27 ha in total) remain as officially nominated. Therefore, as of early 2021, the Emerald Network in Belarus accounted for 11.11 per cent of the country’s territory.

Surprisingly, EEA noted\(^92\) as many as 162 ASCIs allegedly present in Belarus already in 2019, covering 2,411,130 ha (or 12 per cent of the country’s territory), which can hardly be explained (according to the Council of Europe, the above 155 ASCIs and 7 nominated potential Emerald Network sites together encompass only 2,403,838.4 ha, hence less than the number indicated by the EEA).

Section 7.2 noted the designation of 9 new Ramsar sites since 2005 (incl. 7 sites in 2012–2013), in result at the time of the 3EPR Belarus had 16 Ramsar sites covering over 600,000 ha, including 2 transboundary sites (Kotra and Prostyr).

However, the information cut-off date for the 3EPR was in the end of October 2015, while according to RSIS, Belarus in April 2015 already had 26 Ramsar sites (covering 777,895 ha in total) which included 6 sites designated in 2014: Dnieper River Floodplain\(^93\) (29,352.9 ha), Drozbitka-Svina\(^94\) (6,727.2 ha), Golubickaya Puscha\(^95\) (18,240 ha), Polesye Valley of River Bug\(^96\) (23,159 ha), Servech\(^97\) (9,068 ha), and Vileity\(^98\) (8,452 ha), and 4 sites designated in March 2015: Dikoe Fen Mire\(^99\) (23,145 ha), Iput River Floodplain\(^100\) (3,501.8 ha), Podvelikiy Moh\(^101\) (10,647 ha), and Svishlochsko-Berezinskiy\(^102\) (18,341 ha). As of early 2021, the above situation did not change.

6CBD NR noted that 4 out of 26 Ramsar sites are parts of transboundary wetlands of international importance, according to RSIS Prostyr\(^103\) is part of the Stokhid-Prpiat-Prostyr Transboundary Ramsar Site (est. 2008) together with 2 Ramsar Sites in Ukraine: Prypiat River Floodplains (No.776) and Stokhid River Floodplains (No.777); Kotra\(^104\) is part of the Kotra-Cepkeliai Transboundary Ramsar Site (est. 2010) together with Cepkeliai in Lithuania (No.625), Vileity is part of the Adutiskis-Vileity Transboundary Ramsar Site (est. 2016) together with Adutiskis-Svyla-Birveta wetland complex in Lithuania (No.1992), Olmany Mires Zakaznik\(^105\) is part of the Olmany - Perebrody Mires Transboundary Ramsar Site (est. 2015) together with Perebrody Peatlands in Ukraine (No. 1402).

3EPR section 7.2 mentioned the only ‘natural’ WH property of Belarus (part of the transboundary Białowieża Forest\(^106\) WH site, shared with Poland), and 3 MAB biosphere reserves (incl. West Polesie\(^107\) Transboundary BR, shared with Poland and Ukraine). According to UNESCO, as of early 2021 no relevant sites were added to the Tentative List.

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\(^93\) [https://rsis.ramsar.org/ris/2244](https://rsis.ramsar.org/ris/2244)

\(^94\) [https://rsis.ramsar.org/ris/2261](https://rsis.ramsar.org/ris/2261)

\(^95\) [https://rsis.ramsar.org/ris/2266](https://rsis.ramsar.org/ris/2266)

\(^96\) [https://rsis.ramsar.org/ris/2252](https://rsis.ramsar.org/ris/2252)

\(^97\) [https://rsis.ramsar.org/ris/2250](https://rsis.ramsar.org/ris/2250)

\(^98\) [https://rsis.ramsar.org/ris/2251](https://rsis.ramsar.org/ris/2251)

\(^99\) [https://rsis.ramsar.org/ris/2263](https://rsis.ramsar.org/ris/2263)

\(^100\) [https://rsis.ramsar.org/ris/2262](https://rsis.ramsar.org/ris/2262)

\(^101\) [https://rsis.ramsar.org/ris/2267](https://rsis.ramsar.org/ris/2267)

\(^102\) [https://rsis.ramsar.org/ris/2268](https://rsis.ramsar.org/ris/2268)

\(^103\) [https://rsis.ramsar.org/ris/1611](https://rsis.ramsar.org/ris/1611)

\(^104\) [https://rsis.ramsar.org/ris/1216](https://rsis.ramsar.org/ris/1216)

\(^105\) [https://rsis.ramsar.org/ris/1091](https://rsis.ramsar.org/ris/1091)

\(^106\) [https://whc.unesco.org/en/list/33/](https://whc.unesco.org/en/list/33/)

\(^107\) [https://en.unesco.org/biosphere/eu-na/west-polesie](https://en.unesco.org/biosphere/eu-na/west-polesie)
Bosnia and Herzegovina

In case of Bosnia and Herzegovina, its 3EPR section 11.3 on trends in development and management of ecological networks almost entirely focused on the country preparations for the development of the EU Natura 2000 network, which resulted in e.g., the development of draft legal framework, identification of potential Natura 2000 sites, guidelines on the preparation of related management plans, and drafting such for 3 pilot sites (Tišina Pond, Mt. Orjen, and Mt. Vranica), which is a progress compared to the reported failure of the project “Establishment of the Emerald Network in Bosnia and Herzegovina” (Dec. 2004 – Jan. 2006). Furthermore, section 11.3 mentioned different pressures and threats caused by anthropogenic activities (which would be more relevant to section 11.5 “Pressure on biodiversity”).

Therefore, section 11.3 neither elaborated on the development and management of the network of PAs designated under the ‘national PA categories’, nor mentioned any international PA designation. No map of the national PA network was provided; therefore its geographical distribution, spatial layout and connectivity cannot be analyzed.

The previous section 11.2. stated that 30 existing PAs covered “only 2.07 per cent of the national territory (1,063 km²)” and that “From 2013 to this date, 1,525.44 ha has been designated as protected” (which indicated that the total PA per cent share in the country’s territory increased only from 2.0461 per cent in 2013 to 2.0759 in 2017).

As for the extension of the PA network, SDG-related Box 11.2 stated (under SDG Target 15.1) that “there is some progress towards this target, which, in addition to the existing protected areas, is also reflected in the designation of new ones. For example, the current project Achieving Biodiversity Conservation through Creation, Effective Management and Spatial Designation of Protected Areas and Capacity Building (2017–2019), conducted by UNEP and Bosnia and Herzegovina governmental partners, should expand the country’s protected areas coverage by some 5 per cent of the total national territory, trebling the existing...
area under protection to about 101,000 ha” (while, according to table 11.1, existing PAs encompassed 106,281.4 ha already in July 2017).

Unfortunately, none of the above sections investigated the reasons for the failure of the implementation of the 2007 Spatial Plan of RS 2008–2015 (not even referred to in 3EPR chapter 11, but described in 2EPR), according to which 150 new PAs (accounting for 15–20 per cent of the country’s territory) were planned to be established, including 8 nature reserves, 11 national parks, 11 regional parks (natural parks), 107 recreational, cultural, scientific, landscape and other PAs, as well as 13 memorial parks and monuments; despite that the RS Institute for Protection of Cultural, Historical and Natural Heritage elaborated 16 comprehensive feasibility studies for particular areas to be designated as protected.

SDG-related Box 11.2 mentioned the planned development of the PA network (in the context of SDG Target 11.4, concerning safeguarding the world’s cultural and natural heritage), by stating “The Spatial Plan of the FBiH for the period 2008–2028 (not yet adopted) incorporates a provision to protect a total of 18.06 per cent of the entity’s territory by 2028, while the Spatial Plan of RS sets 15.51 per cent of protected areas in this entity as the target for 2025”.

Furthermore, Box 11.2 (under Target 15.4) stated that the “Spatial Plan of the FBiH for the period 2008–2028 stipulates the establishment of 14 new protected areas with a total spatial coverage of about 4,488 km2 (18.5 per cent of the entity’s territory), of which 4240.96 km is in mountainous areas” (thus, inconsistent with the previous information on 18.06 per cent as the target value set for the FBiH).

It should be explained, that the above mentioned current Spatial Plan of RS until 2025 is the amended 2007 Spatial Plan of RS for 2008–2015 (Decision on Adoption of the Proposed Amendments to the Spatial Plan of RS until 2025, OG RS, No. 15/15).

Therefore, the possible fourth EPR cycle of Bosnia and Herzegovina should try to verify whether the Spatial Plan of the FBiH for the period 2008–2028 has officially been adopted, investigate how many of the 150 new PAs which designation was stipulated by the ambitious 2007 Spatial Plan of RS were kept in its amended 2015 Spatial Plan until 2025, and assess the implementation of both entity’s Spatial Plans (valid until 2028 and 2025 respectively) in terms of new PA designation, and in reaching the resulting 18.06 (or 18.5 ?) per cent target set for the FBiH, and 15.51 per cent target set for RS.

Such assessment would be important, as the 2019 VNR by Bosnia and Herzegovina stated that PAs covered 84,624.41 ha in the FBiH (3.24 per cent vs. target 18.06/18.5 per cent of the entity’s territory), and 32,001.12 ha in RS (only 1.3 per cent vs. target 15.51 per cent of the entity’s territory), which is, to say the least, well below the target values stipulated by the above Spatial Plans.

Furthermore, VNR mentioned “ongoing efforts to expand the protected area network in BiH aby at least 10 new protected areas”, while (according to 3EPR Box 11.2) solely the Spatial Plan of the FBiH for 2008–2028 stipulated the designation of as many as 14 new PAs.

Basing on the 2019 VNR, it can be calculated that PAs in both above entities encompassed 116,625.53 ha, thus 10,344.13 ha more than in July 2017, which indicates recent progress, more intensive than in 2013–2017 (when only 1,525.44 ha were taken under protection). Thus, the PA coverage in 2019 reached 2.278 per cent of the territory of Bosnia and Herzegovina.

Unfortunately, 6CBD NR108 by Bosnia and Herzegovina (published in July 2019) did not provide the information on existing PAs, repeating only (on numerous pages) the information that “The current surface of protected areas in entire BiH amounts to 2.28%, in FBiH 3.24%, and in RS 1.30%” and informing on planned extensions of the PA network.

Therefore, in order to update the above data on trends in development and management of ecological networks, other sources were used, which indicated that the total area under legal protection in Bosnia and Herzegovina, as of early 2021, accounted for 147,988.02 ha (or 2.89 per cent of the country’s territory).

According to the ISNC-FBiH, the PA network in this entity, as of early 2021, included 11 PAs encompassing 99,163.39 ha in total (which accounted for 3.80 per cent of the entity’s territory), including 36,629.08 ha in 1 national park, 43,624.01 ha in 2 nature parks, 9,206.86 ha in 4 natural monuments, and 9,703.44 ha in 4 protected landscapes.

According to the ISNC-RS, the PA network in this entity, as of early 2021, included 25 PAs encompassing 48,824.63 ha in total (which accounted for almost 1.95 percent of the entity’s territory), including 592.82 ha in 2 strict nature reserves, 26,277.20 ha in 3 national parks, 19,819.19 ha in 3 nature parks, 66.07 ha in 3 protected areas with sustainable use of natural resources, 1,041.56 ha in 14 natural monuments, and 1,027.79 ha in 2 protected habitats (habitat or species management areas).

Comparison of ecological networks in both above entities indicates that in both entities national parks and nature parks covered the prevailing part of the PA, that natural monuments in the FBiH were in general considerably bigger in size than those in RS, however the latter in 2013 designated 2 strict nature reserves, while similar strictly protected PAs of IUCN cat. Ia were still missing in the ecological network of the FBiH. Therefore, the possible fourth EPR cycle should pay particular attention to the progress in designation of strictly protected nature reserves (in both entities).

As for international PA designations, 3EPR section 11.1 Trends in species and ecosystems noted “the proposed 122 Natura 2000 sites” (although such cannot yet be proposed). 3EPR Chapter 1 (on legal, policy and institutional framework) indicated that the above included 58 sites in the FBiH, 61 in RS and 3 in BD (identified in 2014) but reported that no further works followed upon the completion of the EU IPA project (despite that accordingly to the 2017 NBSAP for 2015–2020, areas planned for the Natura 2000 ecological network should be mapped by 2020).

According to the Council of Europe, as of December 2020, Bosnia and Herzegovina officially nominated 29 potential ASCIs.

3EPR Chapter 5 (on the implementation of international agreements and commitments) noted 3 Ramsar Sites in Bosnia and Herzegovina: Hutovo Blato, Bardaca Wetland, and Livanijsko Polje, encompassing the total area of 56,779 ha (according to the Ramsar Sites Information Service, RSIS, designated in 2001–2008, thus before 2EPR). Despite that all above 3 sites were additionally considered Important Bird and Biodiversity Areas (IBAs), none had a valid management plan in place at the time of the 3EPR (although, according to RSIS, the Ramsar Small Grants Fund provided financial assistance for the preparation of such for Bardaca Wetland111).

2019 VNR by Bosnia and Herzegovina mentioned its 3 Ramsar sites and briefly described the values of Hutovo Blato Ramsar site (according to RSIS also a Nature Park, incl. 2 strict bird reserves).

As of early 2021, the number of Ramsar sites in Bosnia and Herzegovina did not increase, however, according to RSIS, the total area of the above 3 sites accounts for 57,192 ha.

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110 http://e-priroda.rs.ba/en/protectedsites/
111 https://rsis.ramsar.org/ris/1658
112 https://rsis.ramsar.org/ris/1105
3EPR Chapter 5 on the implementation of international agreements and commitments noted 4 ‘mixed’ properties inscribed to the national Tentative List (which information was not complete, as according to UNESCO, also 2 ‘natural’ sites were tentatively listed at the time of the 3EPR).

The self-assessment on the implementation of the 3EPR recommendations provided in 2020 by Bosnia and Herzegovina, mentions the submission of 2 ‘natural’ sites to the national Tentative List: Strict Nature Reserve - Primeval forest “Perućica” and Strict Nature Reserve - Primeval forest “Janj” (the first added to the Tentative List in May 2017 as a separate new property, the latter on 31 January 2019, proposed for inclusion into the transnational property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”).

Furthermore, according to UNESCO, a complex of travertine waterfalls in Martin Brod - Una National Park (surprisingly not mentioned by Bosnia and Herzegovina) has been added to the national Tentative List in April 2019 under the ‘natural’ category. The 4th ‘natural’ site, remaining on the Tentative List since 2004 is Vjetrenica cave. 4 ‘mixed’ sites include “The natural and architectural ensemble of Blagaj”, “The natural and architectural ensemble of Blidinje”, “The natural and architectural ensemble of Jajce”, and “The natural and architectural ensemble of Stolac” (all tentatively listed in 2007). Therefore, the progress in official nomination of World Heritage sites in Bosnia and Herzegovina should possibly be verified under the future fourth EPR cycle.

As of early 2021, Bosnia and Herzegovina had no UNESCO MAB biosphere reserves designated.
Bulgaria

As for Bulgaria, a major part of its 3EPR section 9.2 “Protected areas, Natura 2000 protected sites and the national ecological network” comprehensively elaborated on different ecological networks. Trends in the spatial extension of the national PA network was illustrated by table 9.3, according to which the total area encompassed by these PAs increased by 13.53 per cent between 2000 and 2015. The area encompassed by national parks remained unchanged over these 16 years, the area of reserves (strictly protected) and managed reserves was almost the same, the area of natural monuments significantly decreased, while the area of nature parks and protected sites significantly increased, due to the designation of new ones.

Section 9.2 explained the reasons for the above trends, and emphasized that 80 per cent of PAs in Bulgaria did not exceed 100 ha in size (of which some 20 per cent were smaller than 1 ha), and that approx. a half of the areas included in the national PA network had a weak conservation status (e.g., according to table 9.3, as of 2015, nature parks accounted for almost 44 per cent of the whole, compared to strictly protected reserves encompassing 13 per cent, and 25.7 per cent inside national parks). Unfortunately, 3EPR did not provide a map which could present the geographical distribution of PAs of national categories and allow to assess the level of ecological connectivity of the national PA network.

According to 2020 VNR by Bulgaria, at the end of 2018, its national PA network encompassed 584,861.5 ha in total (which accounted for 5.27 per cent of the country’s territory, not yet 5.3 as indicated in the VNR).

Although 3EPR section 9.2 mentioned that the rapid increase in the number of protected sites (132 in 2000, vs. 564 in 2015, and 568 in 2018) resulted from the inclusion in 2002–2004 of sites originally established as "historic places", and the common perception of this PA category as flexible (as no requirements on their size and ownership were set), some part of ‘protected sites’ designated in 2011–2015 was established under the EU Life+ Programme in order to protect rare and threatened plant species of national importance (therefore referred to as “microreserves”). Section 9.2 specified that “between 2010 and 2014, a network of 58 small protected sites covering around 1,000 ha in total was established to
preserve isolated populations of 47 species of Bulgarian flora (44 vascular plants and 3 bryophyte species)", which is obviously a best practice example, worth promoting under the next EPR cycles.

6CBD NR indicated the publicly available online ‘Register of protected areas in Bulgaria’,123 containing, as of early 2021, records of 1,023 PAs of national PA categories, and 341 Natura 2000 sites.

3EPR section 9.2 comprehensively described the process of Natura 2000 sites identification and designation in Bulgaria, well-illustrated by map 9.1, which shows that this ecological network is not only well connected (where areas designated under both Directives are linked by ecological corridors made of areas designated under the Habitats Directive), but additionally provides opportunities for transboundary conservation initiatives with the neighbouring countries. Section 9.2 emphasized that Bulgaria is among the European countries with the highest territorial share of Natura 2000 sites (34.4 per cent vs. 18 per cent average for EU), encompassing over 4 million ha (of which 56.47 per cent was forests, and 32.35 per cent agricultural land). At the end of 2015, the Natura 2000 network in Bulgaria consisted of 340 sites, including 119 SPAs covering 22.7 per cent of the country’s territory, and 234 SCIs covering 30 per cent of the territory (in 13 cases SPAs and SCIs completely overlapped). As of spring 2016, all 119 SPAs and 6 SACs had duly been designated by ministerial orders, while such designation was pending for the remaining 228 SCIs.

The above information on Natura 2000 network development was updated by the 2020 VNR by Bulgaria, which noted 341 Natura 2000 sites (or 354 in total numbers, due to the above mentioned overlaps) "covering a total of 34.9% of the country’s territory: - 234 Natura 2000 protected areas under the Habitats Directive, which cover approximately 30.3% of the country’s territory with a total area of 36,119 sq. km; - 120 Natura 2000 protected areas under the Birds Directive covering 23.1% of the country with a total area of 26,165 sq. km" (however, the 2020 VNR did not indicate the current status of the 228 SCIs, whether such were designated as SACs, which can possibly be verified under the fourth EPR cycle).

According to additional information provided in 2020 by Bulgaria on its progress in achievement of SDGs, its Natura 2000 network consisted of 341 sites, covering 41,554 km² in total, incl. terrestrial N2000 sites (38,728 km², and 35 per cent of the land area) and marine N2000 sites covering 2,827 km² (SCIs 2,482 km², SPAs 550 km², hence partly overlapping). If properly calculated, the per cent share of terrestrial N2000 sites would account for 34.92 per cent of the country’s territory.

According to the self-assessment on the implementation of the 3EPR recommendations provided in 2020 by Bulgaria, one Natura 2000 site management plan was approved in 2017, for BG0002015 Konush Dam124 (by Order № RD-145/24.02.2017 of the Minister of environment and water).

As for the Ramsar network, 3EPR section 9.2 mentioned only the transboundary initiative, under which a bilateral cross-border (shared with Romania) wetland complex was established in 2013. Much more detailed and complete information is available in 3EPR chapter 4 on implementation of international agreements and commitments, under section 4.2, which noted 11 existing Ramsar sites (according to RSIS 5 of these were established in 2002, and 1 in 2011), that in 2013 three existing Ramsar sites in Bulgaria (Belene Islands Complex, Ibisha Island, and Srebarna) were included in 3 transboundary complexes, involving neighbouring sites located in Romania, as well as that the 2 Ramsar sites were recently extended (Belene Islands Complex by 11,432 ha in 2012, and Ibisha Island by 2,993 ha in 2013). As of early 2021, the number of Ramsar sites in Bulgaria did not change, 11 sites currently cover the total area of 49,397 ha.

Similarly, 3EPR section 9.2 is very brief concerning the World Heritage designations (informing that the Tentative List including proposals dating back to 1984 was updated in 2010–2011, and that Bulgaria actively participates only in the European beech forest serial nomination process), especially if compared

to relevant part of section 4.2, which described in detail the 2 ‘natural’ World Heritage properties inscribed already in 1983: Pirin National Park\textsuperscript{125} WH property (extended in 2010 and supplemented by a buffer zone to prevent its inscription onto the List of World Heritage in Danger, due to ski infrastructure developments), and Srebarana Nature Reserve\textsuperscript{126} (in 1993–2003 listed at the List of World Heritage in Danger, supplemented by a buffer zone in 2008). Section 4.2 mentioned also “several natural sites included in the tentative list”.

According to UNESCO\textsuperscript{127} these were the Roussensky Lom National Park\textsuperscript{128} (added to Tentative List in 1984), and 4 other ‘natural’ sites added in 2011: Central Balkan National Park,\textsuperscript{129} Pobiti Kamani Natural Monument,\textsuperscript{130} Rocks of Belogradchik,\textsuperscript{131} and Vrata Karst Nature Reserve.\textsuperscript{132} Furthermore, as the 3EPR information cut-off date was 26 January 2017, the 3EPR could not yet inform on the successful designation of the Bulgarian components (9 reserves inside the Central Balkan National Park) of the transnational WH property Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe,\textsuperscript{133} approved at the 41st session of the World Heritage Committee\textsuperscript{134} held on 2-12 July 2017.

According to 2020 VNR by Bulgaria and UNESCO database, the above proposed 5 ‘natural’ sites remain on the Tentative List. Hence, the progress in their designation can possibly be verified under the fourth EPR cycle.

As for UNESCO MAB Biosphere Reserves, 3EPR section 4.2 noted 16 designated sites, as well as on the ongoing revision process, resulting from their outdated design, due to the fact that the “zoning of biosphere reserves does not correspond to requirements of the 1998 Seville Strategy for Biosphere Reserves” (in fact the Seville Strategy\textsuperscript{135} was adopted in 1995), in result Bulgaria submitted in 2016 nomination files concerning 4 “post-Seville biosphere reserves”. Section 9.2 provided more details on the above, 15 out of 16 previously designated sites were strict reserves (thus, indeed incompatible with the modern BR concept), while the 4 sites proposed in 2016 (including broader regions of Central Balkan National Park, Srebarana Managed Reserve, Chervenata Stena Reserve, and Uzunbudjak Reserve) cover 7 of the “old generation biosphere reserves”.

The 2020 VNR by Bulgaria stated “Currently, there are 10 biosphere parks in Bulgaria, declared under the UNESCO Man and Biosphere Programme, which are part of the Global network. Four of these sites: “Central Balkan”, “Chervenata Stena”, “Srebarana” and “Uzunbudzhak” represent contemporary post-Seville biosphere parks that meet the requirements and principles of the Seville Strategy (1996) and the legal framework on biosphere parks. The six other old-type biosphere parks, incl. “Bistrishko Braništé”, “Mantaritsa”, “Parangalitsa”, “Chuprene”, “Ali Botush”, and “Bayuvi Dupki–Dzhindzhritsa” will only be able to retain their status as UNESCO biosphere reserves if they comply with the zoning requirements and functions set out in the Seville Strategy”.

However, the situation in 2020 was dynamic, and the 2020 VNR statement became outdated, according to UNESCO\textsuperscript{136} as of early 2021 Bulgaria had only 6 MAB Biosphere Reserves, 2 areas designated in 1977 retained their BR status (Bistrishko Braništé, and Tchoupréné), the status of 3 other BRs designated in 1977 (Chervenata Sténa, Ouzounboudjak, and Srébarana) was extended in 2017, and the Central Balkan

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\textsuperscript{125} https://whc.unesco.org/en/list/225
\textsuperscript{126} https://whc.unesco.org/en/list/219
\textsuperscript{127} https://whc.unesco.org/en/tentativelists/state=bg
\textsuperscript{128} https://whc.unesco.org/en/tentativelists/54/
\textsuperscript{129} https://whc.unesco.org/en/tentativelists/5641/
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\textsuperscript{133} https://whc.unesco.org/en/list/1133
\textsuperscript{134} https://whc.unesco.org/en/sessions/41com/decisions/
\textsuperscript{135} https://unesdoc.unesco.org/ark:/48223/pf0000103849
\textsuperscript{136} https://en.unesco.org/biosphere/eu-na
BR (encompassing former biosphere reserves: Boitine, Djendema, Steneto, and Tsaritchina) was designated in 2017, while 4 former biosphere reserves (Alibotouch, Doupki-Djindjritza, Mantaritza, and Parangalitza) were withdrawn in 2020. The reasons and process were described in detail in 6CBD NR.

3EPR section 9.2 mentions also the transnational European Green Belt Initiative (aimed at networking PAs located along the former Iron Curtain), which (according to section 9.2) resulted in or contributed to the designation of Belasitsa Mt. as a nature park, development of management plans for several PAs (Belasitsa Nature Park, Gabra and Shabanitsa managed reserves, Ali Botush, Carna reka, Chuprene, Gornata koria, Kongura, Sokolata, Vitanovo and Uzunbudjak nature reserves), and support for the NGO project “Strengthening the cooperation and possible establishment of transboundary PA in Osogovo Mountains” (at the state border with North Macedonia).
Section 6.2 of the 3EPR of Georgia stated that “no protected area network is yet developed in Georgia”, meaning that the existing PAs of different national categories were not linked by any legally protected ecological corridors, which could then form a ‘well connected’ ecological network (ABT11), which is also well illustrated by map 6.1, where most PAs form isolated islands scattered around the country. However, the system of PAs designated under the national legislation should be considered as a national PA network, even if still requiring further extension and better spatial design.

According to section 6.2, as a result of new PA designations (mentioned in the previous sub-section of this assessment) the total area of the national PA network increased in the 3EPR reporting period from 494,050 ha (7.09 per cent of country’s territory) to 600,668 ha (8.62 per cent). However, this network was neither adequately developed in all regions of the country, nor was ecologically representative by covering all main natural ecosystems representative of Georgia, section 6.2 emphasized that “critical gaps still exist, in particular in the Central Caucasus Mountain range (the regions of Svaneti, Raja, Lechkhumi and Khevsureti)”. As for the composition of the national PA network, 3EPR Introduction noted that 10 national parks present in Georgia in 2013 together encompassed 276,616 ha, which accounted for 58 per cent of the total area protected at that time (as the area of Pshav-khevsureti National Park designated in 2014 was not provided in its 3EPR, similar indicator for the next years cannot be calculated). Furthermore, the Introduction chapter noted that the growth in area was most rapid among the habitat and species management areas category (by 8 per cent), although such encompassed very small areas at the beginning of the reporting period.

As for the planned extensions of the national PA network, section 6.2 noted that “The Government is planning to develop PA network through designation of PAs of Category V and VI connecting other categories I-IV to insure achievement of conservation goals in production landscape”. Furthermore, although section 6.2 stated that no “spatial development plan in order to strengthen the existing protected
areas and transform them into a network” was in place, and that “no actions are taken for establishing an interconnected protected area network. Nevertheless, a plan and steps to set up a protected area network exist”, it did mention the “Caucasus Ecoregional Conservation Plan” adopted in 2011 by the Caucasus Biodiversity Council (which is/was an informal coordination mechanism involving representatives of central governments, NGOs, and scientific community of the 6 Caucasus countries, led by WWF), which “provides for Georgia, as well as Armenia and Azerbaijan, a comprehensive ecological network map with corridor planning both within the country and with neighbouring countries”.

Unfortunately, the above map was not included in the 3EPR, while map 6.1 provided by the Ministry of Environment and Natural Resources Protection indicated several planned PAs (as of 2014), almost all concentrated in the northern part of the country (along the state border with the Russian Federation), potentially filling the gap in the geographical coverage and enhancing the ecological connectivity of the present network at least in the northern part of the country, whereas PAs in other regions would remain not spatially linked. It should be noted that this 2014 map did not indicate any new PAs planned at the state borders with Armenia or Azerbaijan (stipulated by the above 2011 Caucasus Ecoregional Conservation Plan).

2020 VNR by Georgia mentioned (VNR) the ongoing designation of new PAs, due to which the PA share in the country territory (10.4 per cent as of 2019) was expected to increase to 12 per cent. VNR stated that “Currently, Georgia is in process of establishment of new protected areas, which will significantly increase the coverage of various ecosystems by protected areas”. Hence, the extension of the national PA network in Georgia, also towards the desired improvement of its ecological representativeness, and fostering transboundary conservation initiatives with neighbouring countries, should possibly be verified under the fourth EPR cycle.

3EPR section 6.2 mentioned the progress made in 2009–2011 in the identification and mapping of potential 20 ASCIs (together encompassing 596,475.63 ha) nominated for inclusion into the Emerald Network (incl. 8 ASCIs located inside existing PAs of national categories).

2020 VNR by Georgia noted the progress in the development of the Emerald network since 2008 and stated that “Emerald Network in Georgia currently comprises of 58 Emerald sites. The area of the network is 1,285,974 ha and covers 18.45% of the country’s territory. 44% of the Network overlaps with the protected areas of Georgia and 63.5% with the State Forest Fund. It is anticipated that by the end of 2020 the Emerald Network will be extended by approximately 5 sites”. Similarly, EEA reported 136 on the 58 ASCIs in Georgia (as of 2019), reportedly encompassing 1 286 043 ha (or 18 per cent of the country’s territory).

However, according to the Council of Europe (List of officially adopted Emerald Network sites as of December 2020 published after the 40th meeting of the Standing Committee on 30 November – 4 December 2020138) only 46 ASCIs have officially been adopted in Georgia (1,017,318.2 ha in total, which accounted for 14.6 per cent of the country’s territory), while further 4 potential ASCIs remain as officially nominated (hence, the presence of 58 ASCIs in Georgia, as indicated by its 2020 VNR and by the EEA, cannot be confirmed).

As a result of the 2020 self-assessment on the progress in implementation of the 3EPR Recommendation 6.2 Georgia stated that “the network of National Protected Areas and Areas of Special Conservation Interest (ASCI) under Bern Convention are developing annually. Currently both of them cover around 20% of the country area. Research for planned protected areas and ASCIs are in place. Management plans for both types of protected areas are being integrated and developed”.

In order to verify the above information on the national PA network of Georgia, its 6CBD NR dated April 2020 has been examined, it stated that “Before 2014, the total PA coverage was only 6.5% for terrestrial

137 www.eea.europa.eu/themes/biodiversity/europe-protected-areas/protected-areas-in-the-eastern
138 www.coe.int/en/web/bern-convention/emerald-network
and inland water areas. It was significantly increased by the end of 2018 reaching 10.3\%", while Figure 2.
(Nationally designated protected areas by International Union for Conservation of Nature management
category) indicated the total PA of some 700,000 ha, as of 2019. However, 6CBD NR provided no other
data which could confirm the above achievements.

Furthermore, 6BD NR stated “it is expected that even only considering PA categories of national
designation, Georgia will meet the target 12\% for the country’s terrestrial and inland water areas and 2.5
\% of marine areas by 2020. Thus, in respect of its quantitative component (total PA coverage) the country
is “on track to achieve target”. Also, considering the newly established Emerald Network and assuming
that at least some of the Emerald sites located outside existing PAs will soon also be effectively managed,
it is safe to conclude that the country is “on track to exceed target” as far the total coverage component
of this target is concerned”.

6CBD NR also stated that “Important steps have been made toward the development of “effectively and
equitably managed, ecologically representative and well-connected systems of protected areas and other
effective area-based conservation measures” by achieving progress in the management effectiveness of
the expanding national PA system and formally establishing its Emerald Network. While about 44\% of the
Emerald network overlaps with it, the remaining 56\% is outside the existing PA network and therefore will
significantly increase the connectivity and overall effectiveness of the PA system. In addition, new
approaches – such as contractual nature conservation – have been initiated to enhance ecological
 corridors between the PAs”. The map showing the spatial overlap of the national PA network and the
Emerald Network of Georgia was included in its 6CBD NR, while a table providing data on the coverage of
natural vegetation types by PAs.

However, it should be reminded (see methodological remarks) that the designation of ASCIs can have no
further effect on the protection of site/s concerned, unless a PA of a national legal category is established.
Hence, the legal status and protective regime/s of such “Emerald sites located outside existing PAs” in
Georgia should possibly be verified under the fourth EPR cycle.

As mentioned in the previous sub-section 1.4, according to the official website of the Agency of Protected
Areas of Georgia,\textsuperscript{139} the national PA network (if the spatial overlap of 26 natural monuments with PAs of
other national categories is neglected) as of early 2021 accounted for 584,315.53 ha (or 8.38 per cent of
the country’s territory), which is less than 600,668 ha indicated in 3EPR, or 700,000 ha indicated in 6CBD
NR (and not yet 10.4 per cent of the country’s territory as stated in 2020 VNR, or 10.3 per cent as stated in
6CBD NR of 2020).

The more updated map\textsuperscript{140} of the national PA network is available on the website of the Agency of Protected
Areas of Georgia. It proves that some of the previously planned PAs have already been designated.
However, areas indicated here as “planned protected areas” are limited in size and more scattered
compared to those shown on 3EPR map 6.1.

3EPR did not elaborate on Ramsar sites in Georgia, except for mentioning in section 6.2 the designation
of such sites, and the case of allocating part of a Ramsar site located inside Kolkheti National Park for
construction of the Kulevi (oil) terminal.\textsuperscript{141} According to the Ramsar Site Information Service, at the time of
the 3EPR Georgia harboured 2 Ramsar sites (Ispani Mire, and Wetlands of Central Kolkheti) both
designated in 1997 and located at the Black Sea coast.

According to RSIS, in 2020 further 2 Ramsar sites were designated: Bugdasheni Lake\textsuperscript{142} and Madatapa
Lake,\textsuperscript{143} so that, as of 2021, 4 Ramsar sites in Georgia together encompassed the area of 36,010 ha.

\textsuperscript{139} http://apa.gov.ge/en/protected-areas
\textsuperscript{140} http://apa.gov.ge/uploads/photo/main/2/2311.jpg
\textsuperscript{141} www.kuleviolterminal.com/
\textsuperscript{142} https://rsis.ramsar.org/ris/2434
\textsuperscript{143} https://rsis.ramsar.org/ris/2435
3EPR section 6.2 did not refer to any World Heritage property or UNESCO MAB biosphere reserve in Georgia, except for mentioning efforts towards the identification and nomination of potential areas for inscription on the World Heritage List (re-initiated in 2011 by WWF and IUCN) and designation of MAB biosphere reserves as “positive steps”.

According to UNESCO, as of 2021, Georgia had neither ‘natural’ nor ‘mixed’ WH properties designated, while its Tentative List included 1 ‘natural’ Colchis Wetlands and Forests,144 and 2 ‘mixed’ Mta-Tusheti145 and Vardzia-Khertvisi146 sites, all remaining on the above list since their submission in 2007. 6CBD NR stated that “The Kolkheti and Mtirala National Parks, as well as the colchic forests and wetlands of the Kintrishi and Kobeuli Protected Areas are nominated for inclusion in the UNESCO world heritage sites list”. Therefore, the progress in official nomination of World Heritage sites in Georgia should possibly be verified under the future fourth EPR cycle.

No UNESCO MAB biosphere reserves had been designated in Georgia, as of 2021.

6CBD NR included map 3 “Overlap of PAs with the Important Bird Areas (IBA)” and stated that “A total of 31 Important bird areas (IBA) have been identified and mapped in Georgia with a total coverage area of 1,432,960 ha. A significant part of the IBAs are currently included in the national PA system or designated Emerald Network; those that still remain outside are considered as potential PAs or Emerald sites”.

144 https://whc.unesco.org/en/tentativelists/5223/
146 https://whc.unesco.org/en/tentativelists/5236/
Kazakhstan

The 3EPR of Kazakhstan comprehensively elaborated on trends in the development and management of both the national ecological network and international PA designations. Firstly, 3EPR reported that despite the significant progress in the spatial extension of the national PA network (by some 2,392,741 ha in 2008–2018) which total area of 24,375,034.63 ha accounted in 2018 for no less than 8.94 per cent of the country’s vast territory, most effective PAs (those bearing the legal entity status) extended over only 2.58 per cent of the country, while PAs with no such status (and far less effective) constituted 71.12 per cent of all areas protected in Kazakhstan. Section 9.3 emphasized that PAs of the ‘zakaznik’ category could also be designated for a definite period (hence, become degazetted upon its expiry, which provided only for their temporary, provisional protective status). Furthermore, section 9.3 analyzed the ecological representativeness (table 9.4, showing the coverage of the main ecosystems by PAs, and by PAs of legal entity status) and concluded that many natural ecosystems were considerably underrepresented in the PA network. A similar gap was indicated for the habitats of several rare and threatened wild fauna species. The spatial distribution of PAs of national categories was illustrated by map 10, which indicated high potential for transboundary ecological connectivity, due to the large number of PAs (in particular in the southern and eastern parts of Kazakhstan) located adjacent to state borders with the neighbouring countries.

Surprisingly, 6CBD NR (dated February 2019) provided different data on the total PA under different national PA categories for the same year 2017 as in 3EPR table 9.3, and from the same source of data.

Nevertheless, the above information was updated by the 2019 VNR of Kazakhstan, according to which PAs already covered 26.2 million ha, more exact information was available in table 2 which indicated that the national PA network was made of 158 areas which extended over 26,249,100 ha and included 115 PAs of republican/national significance (thus 3 less than in 2018) encompassing 24,552,600 ha in total, and 43 PAs of local significance, stretching over 1,696,500 ha.
Section 9.3 described the plans for the further extension of the national PA network, including the Basic Provisions of the General Scheme for Organization of the Territory (2013 Government Resolution No. 1434) which stipulated the extension of the PA network to 41.6 million ha (15.27 per cent of the country’s territory) by 2030.

However, 6CBD NR referred to a more recent document: “According to the General Scheme for the organization of the Territory of the Republic of Kazakhstan, approved by the Government of the Republic of Kazakhstan No. 256 of May 12, 2017, in order to preserve and develop the network of protected areas of the Republic, the planned target indicators are set: bringing to 2020 25.6 million hectares (9.4% of the territory countries), by 2030 - up to 28.1 million hectares (10.3%), by 2050 - up to 35.6 million hectares (13.0%)”, which achievement should therefore possibly be verified under the future (incl. the 4th cycle) EPRs.

6CBD NR noted that the expansion of Barsakelmes nature reserve, and designation of Aral state natural reserve (415,000 ha, at the dried bottom of the Aral Sea) and Zhaiyk Ormany state natural (forest) reserve (46,969 ha) were planned, as well as on the ongoing works on the feasibility study concerning the creation of Yertis Zhaiylmasy state natural (forest) reserve (220,000 ha).

Under section 9.4 3EPR stated that the concept of ecological network is defined in the 2006 Law on Specially Protected Natural Areas, which was considerably upgraded in 2012 by an amendment adding Article 81 concerning ecological corridors, immediately implemented in practice. In 2014–2018 Kazakhstan designated 4 legally protected ecological corridors, encompassing the total area of 3,278,769 ha, which accounted for 1.2 per cent of the country’s territory (it should be noted that such corridors were not officially accounted as PAs, which would increase the PA coverage from 8.94 to almost 10.15 per cent of the country’s territory already in 2018). Furthermore, the above corridors have been integrated with the spatial land use/management plans adopted at different (republican, interregional and local) levels, requiring their approval by relevant nature conservation authorities. The above achievement by Kazakhstan is an obvious best practice example, rarely met in the biodiversity conservation practice worldwide, therefore definitely worth promoting among the other countries, under the 4th and all next EPR cycles.

The spatial layout of the national ecological network of Kazakhstan was illustrated in 3EPR by map 11, also indicating spring and autumn bird migration routes, and seasonal migration routes of argali sheep and saiga antelope, as well as the 5 ecological corridors (planned at the time of map preparation).

Therefore, taking into account the total area of 158 PAs (26,249,100 ha in total, as indicated in 2019 VNR) and that the above mentioned 4 legally designated and protected ecological corridors (3,278,769 ha in total, not indicated in official statistics concerning PAs) are the indispensable component of the ecological network of Kazakhstan, its total size, as of 2019, would then account for 29,527,869 ha (or 10.84 per cent of the country’s territory), which already exceeded the target for 2030, set in the above mentioned 2017 General Scheme for the organization of the Territory of the Republic of Kazakhstan.

Furthermore, section 9.4 noted the transboundary ecological networks emerging in cooperation between Kazakhstan and neighbouring countries in Altai-Sayan and Western Tien Shan mountain ecoregions, on the development of the Ramsar sites network in Kazakhstan (6 new sites designated in 2009, and 2 more in 2012) which, as of 2018, included 10 sites (1 designated also as the WH property), together encompassing the total area of 3,281,398 ha, and reported that other 44 wetland areas (encompassing 1,773,408 ha in total) were assigned the republican (national) significance status. Table 9.5 provided names of all 10 Ramsar sites, indicated e.g., the year of their designation, size of area in ha, and level of coverage by PAs.

2019 VNR by Kazakhstan stated that “all Kazakhstan’s wetlands have been assigned the PA status of vulnerable ecosystems from the point of view of biodiversity protection; 10 of them are considered of international importance and are protected under the Ramsar Convention on Wetlands”, which confirmed the 3EPR findings.
As of early 2021, the number of Ramsar sites in Kazakhstan did not change (according to RSIS the 10 sites cover the total area of only 3,188,557 ha, which results from the fact that the data concerning Kourgaldzhin and Tengis Lakes has not been updated, and RSIS still indicates its size as “260,500 ha” as in nomination file of 1997, instead of the current 353,341 ha).

3EPR section 9.4 reported that within the 3EPR reporting period the first 2 ‘natural’ World Heritage properties were designated: Saryarka Steppe and Lakes of Northern Kazakhstan (in 2008) and Western Tien-Shan (in 2016), both established on the basis of existing PAs. According to table 9.6, these 2 WH sites encompassed the total area of 765,631 ha and were surrounded by external buffer areas totalling for 281,437 ha (as Western Tien-Shan is a transnational WH property, shared with Kyrgyzstan and Uzbekistan, above numbers referred solely to areas within the state boundaries of Kazakhstan). Furthermore, section 9.4 stated that 4 further ‘mixed’ and 3 ‘natural’ sites were remaining on its Tentative List, which was ongoing the revision process at the time of the 3EPR.

According to UNESCO, on 7 January 2021 Kazakhstan submitted the proposal for the nomination of its national part of the planned ‘natural’ World Heritage transnational property “Cold winter deserts of Turan” to its Tentative List. The Kazakhstan part of this WH property (shared with Turkmenistan and Uzbekistan) could include, if successfully nominated, Altyn-Emel State National Nature Park (307,653 ha) and Barsakelmes State Nature Reserve (163,126 ha, also a MAB Biosphere Reserve) and cover 470,779 ha in total (which would account for 9.4 per cent of the total area of this trilateral WH site – see also description of this proposed transnational property concerning its Uzbekistan part). However, the previous proposal concerning Altyn-Emel as a separate WH site, submitted in 2002 remains on the Tentative List. Thus, the progress in WH sites designation in Kazakhstan should possibly be reviewed under the fourth EPR cycle.

Section 9.4 noted 8 UNESCO MAB biosphere reserves, all designated in 2012–2017 (thus, within the 3EPR reporting period) on the basis of previously existing PAs (details were provided in table 9.6), among them the Great Altay Transboundary Biosphere Reserve, shared with the Russian Federation. At the time of the 3EPR these 8 biosphere reserves together encompassed 4,546,567 ha (within the state boundaries of Kazakhstan).

After 3EPR, as mentioned in CBD NR in 2018 further 2 MAB biosphere reserves were designated, Charyn (239,731 ha) and Zhongar (645,548 ha).

Moreover, according to UNESCO, 2 new MAB biosphere reserves were designated in Kazakhstan in 2020: the Almaty Biosphere Reserve (176,960 ha in total, including 71,800 of the core zone) located in the Ile-Alatau ridge of the northern Tien Shan Mts., and the West Altai Biosphere Reserve (189,477 ha in total, incl. 86,122 ha core zone) stretching in the mountain-taiga forests of the north-eastern part of East Kazakhstan (at the border with the Russian Federation). In result, as of 2021, all 12 biosphere reserves in Kazakhstan covered already 5,798,283 ha.

Furthermore, section 9.4 noted 127 “key ornithological areas” (added in 2017 to the Law on Specially Protected Natural Areas), which were all designated as IBAs and as of March 2018 encompassed a total area of 15,414,627 ha. 6CBD NR reported on 127 IBAs and that the total area of 4,584,592 ha in 39 IBAs was overlapping with PAs of national categories.

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147 https://rsis.ramsar.org/ris/107
149 https://whc.unesco.org/en/tentativelists/6496/
150 https://whc.unesco.org/en/tentativelists/1682/
151 https://en.unesco.org/biosphere/aspac/charyn
152 https://en.unesco.org/biosphere-reserves/kazakhstan/zhongar
153 https://en.unesco.org/biosphere/aspac/almaty
154 https://en.unesco.org/biosphere/aspac/west-altai
Republic of Moldova

As for the Republic of Moldova, 2014 3EPR chapter Introduction stated that the PA network was highly fragmented and not very well developed, in 2005 it covered 2 per cent of the country’s territory, in 2007 reached 4.8 per cent and since then this indicator remained at the same level. However, contrary to the above, section 9.2 reported on only 4.65 per cent value for 2007, including the Ramsar sites (which were not yet a national PA category at that time): “In 2007, when the country chose to add the coverage of the wetlands of international importance (Ramsar sites) to the national coverage (adding 94,705 ha), the target was more than reached, standing at 4.65 per cent.”.

Furthermore, section 9.2 stated that “landscape reserves and scientific reserves constituting the largest coverage with 52 per cent and 29 per cent of the PAs respectively” with particular attention paid to scientific reserves, and that the “condition of landscape reserves (a regional PA category), representing about 20 per cent of the surface of PAs” was insufficient, as the responsibilities for e.g., monitoring in landscape reserves were delegated to the local level. The total size of all PAs in the country was not provided in 3EPR. Unfortunately, 3EPR did not provide a map of the geographical distribution of PAs of different national categories, which could allow to assess the ecological connectivity of the national PA network.

In 2020, in the course of the self-assessment process, the Republic of Moldova indicated its 2018 6CBD NR, which stated that the State Natural Protected Area Fund included 307 PAs encompassing the total area of 210,695.87 ha (or 5.8 per cent of the country’s territory – however, if properly calculated, this indicator would account for 6.23 per cent). Furthermore, 6CBD NR stated that the procedure for the proclamation of Nistru de Jos National Park commenced in 2018 (under a project supported by the Austrian Government), and that “objective B of the Biological Diversity Strategy of the Republic of Moldova for 2015–2020 foresees the extension of the state protected natural areas to up to 8% of the territory of the Republic of Moldova (or 270,770 ha)”. 

According to ENI SEIS (Shared Environmental Information System) the Republic of Moldova planned the extension of the total area of nationally designated PAs (incl. Emerald Network) to 365,536.8 ha or 10.8 per cent of the country territory.\(^{156}\)

In the course of the self-assessment in 2020, the Republic of Moldova indicated its 2018 6CBD NR\(^{157}\) which stated that the PA network encompassed 210,695.87 ha or 5.8 per cent of the total territory of the country.

3EPR section 9.2 noted the planned establishment of a National Environmental Network (NEN) and that the site selection had not been finalized until 3EPR. 3EPR section 9.4 stated that "In the National Programme on the Environmental Network for 2011–2018, 62 sites, defined as core areas anchoring the network, have been defined, covering 72,309 ha. The NEN has received repeated attention in the last decade, yet it has not succeeded. One of the reasons for this is that the NEN is based on existing PAs and afforestation of degraded sites rather than on effective increase in the area for conservation" (hence, at least 62 core areas were defined by 2013).

6CBD NR stated that the national database for the Emerald Network sites, species and habitats was developed in 2009–2017, containing 52 sites (covering 8 per cent of the country’s territory), 34 habitats, and 165 species. Furthermore, the Law on the Ecological Network was amended, to provide legal basis for the establishment of the Emerald Network on the territory of the Republic of Moldova. In 2018 the list of Moldovan sites of the Emerald Network has been approved. 6CBD NR provided maps of the Emerald Network in the Republic of Moldova.

According to the Council of Europe, as of December 2020, 61 ASCIs have officially been adopted in the Republic of Moldova (encompassing the total area of 325,197 ha, which accounted for almost 9.61 per cent of the country’s territory. Surprisingly, EEA reported\(^{158}\) that the above 61 ASCIs in 2019 covered only 271,780 ha, which can hardly be explained.

3EPR section 9.2 noted 3 Ramsar sites: Lower Prut Lakes\(^{159}\) (2000, 19,152 ha), Lower Dniester\(^{160}\) (2003, 60,000 ha), and Unguri-Holosnita\(^{161}\) (2005, 15,553 ha), at the 3EPR time only the first was based on existing PA of a national category. Furthermore, section 9.2 noted the internal governmental negotiations ongoing since 2008, concerning the designation of Padurea Domneasca as a new (fourth) Ramsar site. Hence, the progress in submission of the above proposal should possibly be assessed under the fourth EPR cycle.

6CBD NR by the Republic of Moldova noted that the "Total area of protected wetlands – 113,858,5 ha", while according to RSIS, as of early 2021, the areas of the 3 Ramsar sites together still cover 94,705 ha (which probably indicates that RSIS data for the Republic of Moldova, coming from 1999, 2003, and 2005 require updating).

3EPR section 9.2 stated that “The Republic of Moldova has placed two sites on the national tentative list for inscription to the UNESCO World Heritage List: the Cultural Landscape Orheiul Vechi in 2007 and the Typical Chernozem Soils of the Balti Steppe in 2011.”. However, despite the word “landscape” in the “Orheiul Vechi Archaeological Landscape”\(^{162}\) property name, according to UNESCO this potential property was nominated under ‘cultural’ criteria (hence, not relevant here), while the “Typical Chernozem soils of

\(^{156}\) https://eni-seis.eionet.europa.eu/east/indicators/d1-nationally-designated-protected-areas-of-the-republic-of-moldova


\(^{158}\) www.eea.europa.eu/themes/biodiversity/europe-protected-areas/protected-areas-in-the-eastern

\(^{159}\) https://rsis.ramsar.org/ris/1029

\(^{160}\) https://rsis.ramsar.org/ris/1316

\(^{161}\) https://rsis.ramsar.org/ris/1500

\(^{162}\) https://whc.unesco.org/en/tentativelists/6220/
the Balti Steppe”\textsuperscript{163} (proper official name of this tentatively listed property) is in the ‘mixed’ category and comprises five long-term agricultural field experiment sites (hence, as not particularly ‘natural’, also non-relevant).

3EPR section 9.2 stated that in 2010 the Republic of Moldova started consultations with Romania and Ukraine on the establishment of a trilateral biosphere reserve (which would be possible by the extension of the Danube Delta Transboundary Biosphere Reserve,\textsuperscript{164} designated in 1998), and stated that “In 2012, a joint project proposal aiming for establishment of the trilateral Biosphere Reserve, covering an area from the Lower Prut Scientific Reserve in the Republic of Moldova to the Danube delta (in Ukraine) was submitted to the European Commission” (despite that the European Commission is not involved, and has no legal mandate to decide on the designation of UNESCO MAB biosphere reserves).

According to the 6CBD NR a Biosphere Reserve “Prutul de Jos” (Lower Prut BR\textsuperscript{165}) was designated in 2018. It should be noted that this UNESCO designation relates to only a part (14,771.04 ha) of the Lower Prut\textsuperscript{166} Ramsar site area (19,152 ha).

6CBD NR also noted the creation and reconstruction of ecological corridors and forest strips for the protection of agricultural land and connection of forest bodies, under UNDP project “Integration of Biodiversity Conservation Priorities into Territorial Planning Policies and Land Use Practices in Moldova” (2015–2018). The above is a good practice example for the other 3EPR countries, surprisingly the Republic of Moldova did not mention it in its 2020 VNR.

3EPR Chapter 1 (on policymaking framework for environmental protection and sustainable development) noted the 2007 Law No. 94-XVI on the National Environmental Network (NEN) which “creates the legal framework for the establishment, development, management and protection of the network, as part of the Pan-European Ecological Network and of local ecological networks”. The progress in the implementation of this 2007 (later amended) Law in the Republic of Moldova should possibly be evaluated under the fourth EPR cycle.

\textsuperscript{163} https://whc.unesco.org/en/tentativelists/5647/
\textsuperscript{164} www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/europe-north-america/romaniaukraine/danube-delta/
\textsuperscript{165} https://en.unesco.org/biosphere/eu-na/lower-prut
\textsuperscript{166} https://rsis.ramsar.org/ris/1029
Mongolia

EPR of Mongolia comprehensively elaborated on trends in the development and management of both the national ecological network and international PA designations. The spatial layout of the national ecological network of Mongolia was illustrated by map 4. This map indicated high potential for undertaking for transboundary conservation initiatives with the neighbouring countries (due to large number of large-scale PAs located adjacent to the state border), and the slightly lower PA coverage of the easternmost part of the country. Taking into account the low level of urbanization and underdeveloped transport infrastructure, the ecological connectivity of the PA network is not particularly threatened (although fenced railways isolated wildlife populations and prevented their migrations).

As this was the first ever EPR of Mongolia, section 11.3 described the progress in the designation of PAs (first PA designated in 1778) and development of the national PA network, due to which the total area under protection encompassed 5,547,900 ha (3.52 per cent of the country’s territory) already in 1976, 12,629,800 ha (8.01 per cent) in 1993, 21,731,500 ha (13.8 per cent) in 2000, 27,207,800 ha (17.4 per cent) in 2012. In 2017 solely the ‘state PAs’ encompassed 27,953,449.98 ha (17.87 per cent of the country’s territory) even without counting the external PA buffer zones, further supplemented by the network of ‘local PAs’ stretching over the further 18,837,459.75 ha (12.04 per cent of the country). In result, as of 2017, the national PA network in Mongolia (details in table 11.2) covered in total 46,790,909.73 (29.91 per cent of the country’s territory), hence an area bigger than e.g., the whole territory of Uzbekistan, or almost twice the size of the territory of Romania.

Furthermore, under separate sub-section, section 11.3 evaluated the ecological representativeness of the state-governed PA network, on the basis of a 2010 gap analysis by WWF Mongolia, which proved that as many as 7 out of 19 natural ecosystems were underrepresented, and significant disproportions in ecosystems’ coverage by PAs occurred between the 4 ecoregions. For example, the 4 steppe ecosystems, which together cover 55.42 per cent of the country and are therefore the most representative of Mongolia, had the smallest (between 4.24 and 7.62 per cent) PA coverage in 2010. Moreover, despite the extensive
size of PA areas, the highest protective regime was ensured solely to their small parts, therefore the functional zoning pattern of many PAs did not adequately safeguard the most important biodiversity values, e.g., the habitats, main refuges and mainstays of rare and threatened species, which were under growing pressure of traditional use for grazing, allowed in the considerable part of the PA network.

EPR section 11.3 described the plans for the further extension of the national PA network, expected to reach 30 per cent of the country’s territory by 2015 (where locally PAs would constitute a half of the above coverage). This indicator has almost been reached (29.91 per cent in 2017, even without counting the external buffer zones). More recently, the National Biodiversity Programme for 2015–2025 amended the target, which stipulated that by 2025 at least 30 per cent of each ecosystem is to be covered by the expanded PA network. Simultaneously, according to the SoER for 2015–2016, the more detailed plans (structured into 3 phases, each lasting approx. 5 years) the PA network in 2030 should include 317 PAs together encompassing 71,177,279 ha, which would then account for as much as 45.50 per cent of the territory of Mongolia.

In its 2019 VNR Mongolia reaffirmed its commitment to further extend the State Special Protected Area network to cover 30 per cent of the country territory by 2030 (probably including also locally PAs in the above coverage). However, even if the above indicator is achieved, a considerable part of wildlife habitats and migration corridors of wide-ranging and globally significant species would remain in the “non-protected” 70 per cent of the country, that was not planned for inclusion in PAs. Therefore, the progress in the further extension of the national PA network should possibly be verified under the fourth EPR cycle.

As in 2020 Mongolia did not provide any additional information to the ECE team (e.g., results of the self-assessment of its progress in the implementation of the 3EPR recommendations), in order to update the above information on trends in development and management of ecological networks, its 6CBD NR167 (published in 2019) has been examined.

6CBD NR stated that “During 2016–2019, Parliament of Mongolia has approved 18 new PAs and expanded 7 existing protected areas and increased the areas under PA Network by 4.4 million hectare. This increase makes the total number of PAs in Mongolia to 115 sites, of which 20 sites are gazetted as Strictly Protected Area (IUCN-Ia, Ib&II), 34 sites as National Parks (IUCN-Ib, II&V), 47 sites as Nature Reserve (IUCN-IV) and 14 sites as National Monuments (IUCN-III). As of September 2019, Mongolia has dedicated 30.27 million hectares area, which constitute 20.1 percent of the territory to State Protected Areas”. It should be noted that the above indicated correspondence of national PA categories with those of IUCN168 might be misleading. Moreover, taking into account that the total territory of Mongolia stretches over 156.41 million ha, if properly calculated the above given total area of the state-governed PA network (30.27 million ha) accounted for only 19.35 per cent (not “20.1 percent”) of the country’s territory.

6CBD NR noted 14 new nature reserves and natural monuments (jointly encompassing additional 1.33 million ha) already approved by the Parliament, but not yet entered into the National Cadastre.

According to 6CBD NR, basing on the ecoregional level assessments and biodiversity hotspot’s gap analysis, 216 areas encompassing 43,415,397 ha in total shall be included by 2030 into the national PA network, such were visualized on the map, showing the anticipated progress in each of 3 phases (2015–2020, 2021–2025, and 2026–2030). Furthermore, 6CBD NR stated that “131 out of these 216 biodiversity hotspots were officially included as a proposed PA in the Master Plan for Land Management of Mongolia for 2019–2030, which was approved by The Government of Mongolia in December 2018”.

6CBD NR briefly assessed the ecological representativeness of its ecological network, by stating that “From the ecosystem representativeness point of view, Mongolia has reached its objective to protect 30 percent for all major ecosystems, except steppe ecosystem. As of 2019, only 8.5 percent of the steppe

167 www.cbd.int/reports/
168 www.iucn.org/theme/protected-areas/about/protected-area-categories
ecosystem is protected and half of the PAs in steppe region are at level of Nature Reserves i.e., IUCN category IV - Habitat/species management area that aims to protect particular species or habitats through traditional management approaches.

Furthermore, 6CBD NR referred to the progress in the development of the local PAs network, by informing that “In parallel, to designated Special (State) Protected Areas, the Local Parliaments at county and province level have designated some of their areas as a Local Protected Area. These LPAs are equal to IUCN category VI – Protected area with sustainable use of natural resources and unlike the state protected areas, the management, protection period and regimes are decided by the Local Parliament. As of February 2019, the Local Parliaments have officially designated 1118 sites covering 24.02 million hectares of land as LPA under status of locally designated Nature Reserve or Natural Monuments. The LPAs, thus, add additional 15.36% of the territory to the country’s PA network”.

Therefore, according to the 6CBD NR, the ecological network of Mongolia in 2019 included already 30.27 million ha (as of September 2019) designated as Special (State) PAs, and 24.02 million ha (as of February 2019) designated as LPAs, which together accounted for 54.29 million ha (or 34.71 per cent of the country’s territory). It should be noted that the external PA buffer zones are not counted in the official statistics, however such can overlap with locally PAs of Mongolia.

The possible next EPR of Mongolia can benefit from the information (indicated in 6CBD NR) that a database of PAs is publicly available online, concerning “Special Areas - State special purpose territory”, and “Special Areas - Regional special purpose territory”, maintained as part of the Computerized Mining Cadastre System (CMCS).

Both EPR Chapter 6 (on the implementation of international agreements and commitments) and Chapter 11 (on biodiversity and PAs, section 11.4) contained comprehensive and detailed information on the network of eleven Ramsar sites, nominated between 1997 and 2004 (last five in 2004), which together covered 1,439,530 ha. Section 11.4 included a separate table 11.5 concerning Ramsar sites, providing names, year of designation, size of their area in ha, and information on their coverage by existing PAs. Although each Ramsar site overlapped with the PA network, only part of these 11 sites was protected under the state or local PA systems, and not all Ramsar sites in Mongolia had management plans. As of early 2021, the number and total area of Ramsar sites in Mongolia did not change. The progress in granting legal protection for the existing 11 Ramsar sites in Mongolia should possibly be assessed under the fourth EPR cycle.

As of 2017, Mongolia had 2 two ‘natural World Heritage properties, the Uvs Nuur Basin (inscribed in 2003) and Landscapes of Dauria (2017), together encompassing 1,443,775 ha of the Mongolian territory, both being parts of transboundary WH sites shared with the Russian Federation. The Mongolian part of the Uvs Nuur Basin WH property was also bearing the UNESCO MAB biosphere reserve status and was part of the bilateral Mongolian–Russian transboundary PA. In both above WH properties the area of their Mongolian components prevailed, 810,234 ha in Uvs Nuur Basin property accounted for 91.2 per cent of its total area, while 633,541 ha in the Landscapes of Dauria site accounted for 69.4 per cent of the total (and included 2 existing PAs). According to section 11.4, almost all World Heritage sites in Mongolia (except the recently inscribed Landscapes of Dauria) had management plans that were being implemented. The Tentative List by Mongolia included 3 ‘natural’ (the Desert Landscapes of the Mongolian Great Gobi, the Eastern Mongolian Steppes, and Cretaceous Dinosaur Fossil Sites in the Mongolian
Gobi\(^{175}\) and 1 'mixed' (the Highlands of Mongol Altai\(^{176}\)), all tentatively listed since 2014. As many as 3 of these 4 potential WH sites included existing PAs, e.g., the Desert Landscapes of the Mongolian Great Gobi included PAs jointly covering almost 6.2 million ha. The progress in the successful inscription of these sites, remaining on the Tentative List since 2014, should possibly be verified under the fourth EPR cycle.

Section 11.4 noted 6 UNESCO MAB biosphere reserves designated in Mongolia (names, year of designation, size of their total area and of their core zone were provided in a separate table 11.4), jointly covering the area of 16,078,072 ha (equal to 10.28 per cent of the territory of Mongolia), which included 2,064,505 ha under the highest protective regime, as each of the above biosphere reserves was established on the basis of an existing strictly PA (thus providing the BR core zone).

It should be noted that, according to UNESCO, a new MAB biosphere reserve was designated in Mongolia in 2020, the Toson-Khulstai Biosphere Reserve\(^ {177}\) (encompassing 1,010,356.31 ha in total, including 469,928 ha of the core zone, protected as a nature reserve although used as grazing area by resident and nomadic herders) located in north-eastern part of the country, in a transition zone between forest steppe and grassland ecosystems. In result, all 7 MAB biosphere reserves in Mongolia encompass (as at 2021) as much as 17,088,428 ha (equalling to almost 10.93 per cent of the country’s territory), including protected core zones totalling for 2,534,433 ha. To better illustrate the above numbers, it is enough to compare them with the size of e.g., the previous and next described 3EPR countries, located in Europe – the surface of all 7 MAB biosphere reserves in Mongolia is 5 times bigger than the territory of the Republic of Moldova, and over 12 times larger than the territory of Montenegro.

Section 11.4 reported also on the identification of 70 Important Bird Areas (IBAs) in 2017, which together covered an area of 8,358,313 ha (5.3 per cent of the country’s territory). As much as 70 per cent of the IBA network (5,858,813 ha) was protected within state PAs, 6.2 per cent (519,341 ha) was covered by locally designated PAs, while the remaining 23.8 per cent (1,980,159 ha) was not yet included in the PA system of Mongolia. However, some of these remaining areas had been designated as Ramsar sites, World Heritage sites, or biosphere reserves.

\(^{175}\) https://whc.unesco.org/en/tentativelists/5944/
\(^{176}\) https://whc.unesco.org/en/tentativelists/5955/
\(^{177}\) https://en.unesco.org/biosphere/aspac/toson-khulstai
Montenegro

In case of Montenegro, which 3EPR had no chapter on biodiversity and PAs, some information on trends in the development and management of its ecological networks was available in its other chapters, in particular 3EPR Introduction, and Chapter 5 on the implementation of international environmental agreements.

According to 3EPR Introduction, the size of the national PA network increased from 108,784 ha in 2007 to 124,972 ha in 2013, so that the PA share in the country’s territory increased from 7.88 per cent to 9.05 per cent. It should be noted that the above increase resulted mainly from the designation of Prokletije NP (16,038 ha), while the remaining 150 ha had to be added under another national PA category. At the time of the 3EPR existing 5 NPs accounted for as much as 81.34 per cent of the total surface covered by the national PA network.

Due to the lack of relevant chapter, no map of the national PA network was provided in 3EPR, and no assessment of the ecological representativeness and coherence of the ecological network of Montenegro was possible. However, 3EPR Chapter 5 mentioned the gap assessment conducted under the GEF project “Strengthening the Sustainability of the Protected Area System of Montenegro”, implemented in 2009–2013 (surprisingly, the 2015 EPR mentioned the “preliminary results of the project”, despite that this project was apparently completed in 2013), aimed at providing the basis for the planning and “establishment of a long-term, ecologically representative protected areas system”.

The other “preliminary results” of the above GEF project included the studies for proclamation of the areas of Komovi and Piva (Bioc–Volujak–Maglic) as regional nature parks, while 3EPR Chapter 1 indicated that the decisions on the proclamation of Komovi and Piva regional parks were expected to be taken by local self-government authorities. Furthermore, Chapter 1 mentioned that the 2010 NBSAP for 2010–2015 stipulated the extension of some existing PAs, designation of new ones, and the development of the Natura 2000 network in Montenegro.
6CBD NR of Montenegro (of December 2018) stated that, as a result of the designation of 5 new PAs (mentioned in previous sub-section 1.4) in 2014–2017, “the percentage of state territory under protection increased from 8.25% to 12.10%”. Surprisingly, 6CBD NR did not use publicly available data provided by the CGIS database of Montenegro, launched already in 2017, and instead provided the above outdated information.

The CGIS database of Montenegro informs on the composition of the national PA network, which, as of 2019, included 73 PAs: 3 strict nature reserves (420.00 ha in total, thus only 0.2 per cent of the whole PA network), 5 national parks (100,427.00 ha, 54.2 per cent), 1 special nature reserve (150.00 ha, 0.1 per cent), 6 nature parks (79,583.10 ha, 43.0 per cent), 56 nature monuments (4,493.54 ha, 2.4 per cent), and 2 landscapes of exceptional features (196.05 ha, 0.1 per cent). Therefore, the national PA network of Montenegro encompassed in 2019 the total area of 185,269.69 ha, which accounted for 13.414 per cent of the country’s territory.

According to the above database, the progress in new PA designation was most significant soon after the 3EPR, as the nature monument established in 2014 has the area of only 2.21 ha, while the 2 nature parks (Komovi, Piva) designated in 2015 together cover 54,329.90 ha (which accounted for over 29 per cent of the whole PA network), 2 PAs established in 2017 added further 5,016.20 ha, while 2 PAs designated in 2019 jointly cover 13,462.00 ha.

To summarise, 6 PAs designated in 2015–2019 encompassed the total area of 72,808.10 ha, which accounted for as much as 39.3 per cent of the national PA network of Montenegro (as of 2019). The database also noted the functional zonation of the network, where the strict management regime (zona zaštite I) applied to 17,964.58 ha (9.7 per cent of the total). However, this database simultaneously noted that only 9 out of 73 PAs had a valid management plan in place. Unfortunately, the map showing the current geographical distribution of PAs and thus the spatial layout of the ecological network of Montenegro was, as of early 2021, not yet operational.

6CBD NR of 2018 included the map of PAs in Montenegro which clearly indicated the gradual emergence of the 2 parallel belts of PAs stretching across the whole country, thus potentially allowing transboundary ecological connectivity at the larger ecoregional level (by linking PAs located in Bosnia and Herzegovina, Montenegro, and Albania), and mentioned ecological corridors, according to the Spatial Plan of Montenegro until 2020 (“the great bio-corridor of the South-eastern Dinaric Mountains”, linked to “a large regional bio-corridor called the Green Belt”, which is connected to “the Orjen – Lovčen – Rumija coastal mountains corridor”, and another one “located in the direction of Orjen – Pusti Lisac – Maganik – Sinjajevina – Kovren”). 6CBD NR expressed the expectation that a large part of the area of the above ecological corridors will become protected through the establishment of Natura 2000 network.

6CBD NR noted that the proclamation of 2 nature parks (Sinjajevina, Ulcinj Solana), and 3 marine PAs (Katič, Platamuni, Stari Ulcinj) was in progress, while a new (revised) proclamation act for Nature Park Orjen was under preparation. Moreover, 6CBD NR included a map showing the location of planned PAs. The progress in the extension of the national PA network in Montenegro should therefore be assessed under the fourth EPR cycle.

3EPR Chapter 5 reported on the outcomes of the Project on Establishing an Emerald Network, implemented in Montenegro in 2005–2008, including the identification of 156 habitat types, 10 plant and

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178 www.prirodainfo.me/Izvjestaji/PoVrstiZasticenogPodrucja
179 www.prirodainfo.me/Izvjestaji/PoDatumima
180 www.prirodainfo.me/Izvjestaji/PoZonamaZastite
181 www.prirodainfo.me/Izvjestaji/PoBrojuZPSaPlanomUpravljanja
182 www.prirodainfo.me/Mapa
162 animal species important for conservation in Montenegro; and stated that “The Emerald Network in Montenegro includes 32 sites covering 240,077 ha. Other designated areas in Montenegro include.”.

However, according to the Council of Europe, as of December 2020,\(^\text{184}\) Montenegro officially nominated 32 potential ASCIs, but such have not yet been officially designated, as stated in 3EPRI Chapter 5.

6CBD NR noted that “the inventory of 9 KBA for habitats and species from the Habitats Directive was carried out, and 33 potential areas for birds were identified. So far, over 14% of the territory has been mapped through project activities in relation to the Habitats Directive, and it is planned to continue the research in the upcoming period, which is expected to create preconditions for the formal establishment of ecological network by 2025”, which should possibly be verified and assessed under the fourth EPR cycle.

As for the other international designations, 3EPRI Introduction noted that “17.22 per cent of the country’s territory (total 237,899 ha) is under the international protection, as follows: Ramsar sites 40,000 ha, UNESCO cultural and natural heritage 48,895 ha and M&B biosphere reserve 182,889 ha”.

3EPRI Chapter 5 corrected the above information by stating that Montenegro had 2 sites designated as wetlands of international importance, jointly covering 20,150 ha, that Lake Skadar was the first Ramsar site designated in the country (in 2007), the second was Tivat Saline (2013) with the area of 150 ha. Chapter 5 emphasized that despite Tivat Saline is an important resting and feeding area for several threatened migratory bird species, and a habitat of endangered reptile and amphibian species, hunting was allowed (despite that the management plan for this site was still under preparation).

According to RSIS, as of 2021, Montenegro had already 3 Ramsar sites encompassing in total the area of 21,627 ha, including Ulcinj Salina\(^\text{185}\) (designated in 2019), covering 1,477 ha. The progress in granting legal protection for these sites, and further extension of the Ramsar network in Montenegro should be assessed under the fourth EPR cycle.

3EPRI Chapter 5 reported on World Heritage properties in Montenegro, including Durmitor National Park, inscribed already in 1980 (according to UNESCO,\(^\text{186}\) it was extended in 2005 and currently covers 32,100 ha), and that 4 sites were added to the Tentative List in 2010, including “Doclea and Biogradska Gora National Parks”. It should be noted that Doclea\(^\text{187}\) (archaeological site in the former Roman urban area) is not a national park and was considered for the designation solely under ‘cultural’ criteria (hence, not relevant here).

According to UNESCO, in addition to Biogradska Gora National Park\(^\text{188}\) (remaining on the Tentative List since 2010), Montenegro inscribed 2 other ‘natural’ sites to its Tentative List, however the 2018 submission\(^\text{185}\) concerned adding the Virgin Forest Reserve (located within NP Biogradska Gora) to the transnational property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”, while the 2019 submission\(^\text{189}\) was rather procedural, concerning the next extension of the same above transnational property by adding the same above Virgin Forest Reserve (hence, the reserve, encompassing 2,400 ha, submitted in 2018 and 2019 is in fact part of the larger NP area encompassing 5,650 ha, submitted to the Tentative List already in 2010). The progress in the designation of the whole Biogradska Gora NP, or solely its part as the WH property should be assessed under the fourth EPR cycle.

\(^{184}\)www.coe.int/en/web/bern-convention/emerald-network
\(^{185}\)https://rsis.ramsar.org/ris/2399
\(^{186}\)https://whc.unesco.org/en/list/100
\(^{187}\)https://whc.unesco.org/en/tentativelists/5563/
\(^{188}\)https://whc.unesco.org/en/tentativelists/5569/
\(^{189}\)https://whc.unesco.org/en/tentativelists/6325/
\(^{190}\)https://whc.unesco.org/en/tentativelists/6373/
3EPR did not mention the only UNESCO MAB biosphere reserve in Montenegro, the Tara River Basin Biosphere Reserve, designated already in 1976, encompassing 182,889 ha, including the Durmitor NP/WH property, and the deepest and most spectacular European gorge (Tara River Canyon).

Furthermore, 3EPR Chapter 5 mentioned 5 Important Bird Areas (IBAs), 27 IPAs covering the total area of 708,606 ha, and 5 Primary Butterfly Areas (PBAs), and indicated that some IPAs overlapped with Emerald sites, and in result: “11 IPAs are protected either fully or partially. This, however, leaves nearly 60 per cent of Montenegro’s IPAs unprotected”, although already in the next sentence reported that “Other than national parks, protected areas in Montenegro do not have management plans or any regulation of potentially damaging activities” (hence, the protection of IPAs not yet overlapping with NPs might only be virtual, furthermore IPAs are not national PA categories in Montenegro).

Morocco

2014 EPR of Morocco, section 9.2 stated that “Since 2003, Morocco has made substantial progress in extending its network of conservation areas”, which is well justified by the designation of 6 new national parks (parcs national) in 2004–2008, which extended the area under this form of nature protection from the previous 83,537 ha by additional 688,312 ha. However, the resulting total area of all 10 national parks (771,849 ha) still accounted for only 1.728 per cent of the country’s territory. It should be noted that the above did not include the area covered by PAs of the other 4 national categories (parc naturel, réserve biologique, réserve naturelle, site naturel).

Therefore, neither the total area under legal protection in Morocco not its per cent share in the country’s territory can be indicated, as long as the area of other 4 PA categories is not known, and the legal status of SIBEs is not clarified.

6CBD NR (submitted in December 2018, last updated in May 2019) neither clarified the relation between the national PA categories and SIBEs, stating that “The Kingdom of Morocco has a network of protected areas, 10 national parks, 4 reserves of biosphere, 154 SIBEs and 26 RAMSAR sites. According to the latter, protected areas fall into 5 categories: national park, natural park, biological reserve, nature reserve and natural site”, nor noted the presence of PAs of 4 national categories (parc naturel, réserve biologique, réserve naturelle, site naturel) other than national park. Instead, 6CBD mentioned only 10 national parks perceived as PAs (which encompassed the total area of 834,675 ha), and the ‘wildlife reserves’ (covering 47,656 ha), which jointly accounted for 882,331 ha of the total PA.

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192 Le Royaume du Maroc dispose d’un réseau d’espaces protégés, de 10 parcs nationaux, de 4 réserves de biosphère, de 154 SIBE et de 26 sites RAMSAR. Selon cette dernière, les aires protégées sont de 5 catégories : parc national, parc naturel, réserve biologique, réserve naturelle et site naturel.

193 Actuellement les aires protégées (10 parcs nationaux) couvrent un total de 834 675 hectares et les réserves de faune couvrent 47 656 hectares, soit un total d’espace protégé de 882 331 hectares.
However, 6CBD NR did not explain the legal status, management objectives and protective regime of neither ‘wildlife reserves’ nor SIBEs, instead noting that the management of only 30 SIBEs included the implementation of “conservation measures (ban on hunting, ban on quarrying, ban on tourism projects having a negative impact on natural resources, ecological forestry, species conservation...)”, and that these 30 SIBEs “cover an area of 646,998 hectares, which reduces the surface area of protected areas to 1,529,330 hectares”\(^{194}\) (whereas the above number of 1,529,330 ha is in obvious inconsistency with the “882,331 ha of the total protected area” stated on the same page, as well as the total SIBEs’ area of either 1,080,000 ha or 1,247,000 ha provided by the CHM on Biodiversity of Morocco\(^{195}\)).

2020 VNR by Morocco noted that the network of 154 SIBEs encompassed almost 2.5 million ha\(^{196}\) (which is therefore inconsistent with the information provided by the CHM on Biodiversity of Morocco and would imply that the area encompassed by SIBEs more than doubled – which should possibly be clarified under the fourth EPR cycle).

As a result of the self-assessment of the implementation of EPR recommendations carried out in 2020, Morocco stated that “among the 154 SIBEs inventoried, 25 are currently classified as protected areas according to Law 22-07, in addition to the 10 already existing national parks”, which can correspond to the information on ‘wildlife reserves’ (indicated in 6CBD NR) or 29 biological reserves (réserve biologique) of threatened, extinct and reintroduced species (indicated in 2020 VNR).

No information concerning the progress in establishing the Emerald Network in Morocco was provided in EPR.

Section 9.2 emphasized that some ecosystem types (incl. wetlands, coastal areas, and Saharan ecosystems) were underrepresented in the national PA network, which was also much less developed in the south of the country. Unfortunately, no map of the geographical distribution of PAs of different national categories was provided, which could justify the above conclusion, and allow to assess the ecological connectivity of the national PA network.

Furthermore, section 9.2 noted that in 2005 Morocco designated 20 new Ramsar sites, so that the network of 24 sites encompassed a total area of over 272,010 ha. This information was supplemented by EPR Chapter 5 (on implementation of international agreements and commitments) which noted that the above new designations allowed to protect a whole “variety of wetland types, including some which were identified as underrepresented in the List of Wetlands of International Importance, and which Parties should give high priority to designating: these include mountain wetlands and seagrass beds” and provided the relevant examples of such Ramsar sites (Aguelmams Sidi Ali-Tifounassine, and Lacs Isly-Tislite). According to the further text of Chapter 5, at least some Ramsar sites overlapped with PAs (site “Zones Humides de Souss-Massa” located inside a national park), while some other sites (e.g., Complex du bas Tahaddart) remained under severe development pressures.

According to RSIS, 2 new sites were designated in 2018 (Merja de Fouwarate,\(^{197}\) Sebkhat Imli\(^{198}\)) and as many as 12 in 2019 (Assif Mgoun,\(^{199}\) Assifs Ahančal-Melloul,\(^{200}\) Assifs Réghaya-Aït Mizane,\(^{201}\) Cap Ghir-
Imsouane, Côte Atlissate-Boujdour, Côte des Bokkoyas, Haut Oued Lakhdar, Lacs d’Imouzzer du Kandar, Lagune et barrage de Smir, Littoral de Jbel Moussa, Oued Assaquia Al Hamra à La’yone, Oued Tizguite, in result, as of 2021, Morocco already harboured 38 Ramsar sites, jointly covering 316,086 ha (the above number of 38 sites was also mentioned in the 2020 VNR by Morocco).

According to the draft (4th cycle) EPR, in 2017 Morocco adopted the National Wetlands Strategy 2015–2024 and resulting Action Plan, that foresee the nomination of 30 new Moroccan sites for inclusion to the List of Wetlands of International Importance (Ramsar sites).

Morocco’s EPR did not inform on World Heritage properties; however, as of 2021, no ‘natural’ category sites have so far been designated in the country. However, according to UNESCO, 4 ‘natural’ sites remain on the Tentative List by Morocco already since 1998: Aire du Dragonnier Aïgal, Lagune de Khenifiss, Parc national de Dakhla, and Parc naturel de Talassesmtane. Therefore, the progress in the designation of the above potential ‘natural’ World Heritage properties should possibly be assessed under the fourth EPR cycle.

Furthermore, section 9.2 noted the designation of a third biosphere reserve in Morocco in 2006, the Intercontinental Biosphere Reserve of the Mediterranean (shared with Spain), and that “a fourth biosphere reserve (Biosphere Reserve of the Cedraie) is planned, incorporating an area of around 500,000 ha across the Ifrane, High Atlas Oriental and Khenifra National Parks, with a view to listing the Cedraie de l’Atlas as World Heritage (table 9.4).”

It should be noted that table 9.4 “Protected sites by type” provided information solely on national parks and biosphere reserves, which indicates that biosphere reserves could have been perceived as PAs. Table 9.4 indicated the rounded size of these 3 biosphere reserves, which influenced the ‘Grand total’ of “11,475,849 ha” (the correct number was 10,927.790 ha, as the 3 biosphere reserves were in fact smaller than indicated in table 9.4).

According to UNESCO, since 2016 Morocco already harbours 4 MAB biosphere reserves: Arganeraie Biosphere Reserve (1998) encompassing as much as 2,499,970 ha (However, with a small core zone of only 16,620 ha), Oasis du Sud Marocain Biosphere Reserve (2000) covering 7,185,371 ha (moreover, with an extensive core zone, covering as much as 908,581 ha), the Intercontinental Biosphere Reserve of the Mediterranean (2006) encompassing the total surface (terrestrial and marine) of 907,185 ha (to which Morocco contributed with 470,600 ha: 64,600 ha to its core zone, 282,500 ha buffer zone, and 123,500 ha transition zone), and the Atlas Cedar Biosphere Reserve (2016) stretching over 1,375,000 ha (including 130,000 ha of the core zone). In result, 4 biosphere reserves jointly encompass the area of 11,530,941 ha (which equals to 25.82 per cent of the country’s territory).
EPR section 9.2 noted the identification of 68 KBAs in Morocco (which form part of the wider Mediterranean Basin Biodiversity Hotspot), including 2 KBAs, ("the Essaouira dunes and the area of Fes and surroundings") categorized as 'Irreplaceable KBAs', as each contained the entire known range of a globally threatened species. Furthermore, section 9.2 reported that "national monitoring of IBAs is not yet under way in Morocco, making an assessment of trends impossible", and that "the conservation status of several SIBE sites is far from certain, as is the status of a number of Ramsar sites".

Section 9.2 referred to and provided more detailed information (table 9.3) on the 5 key biodiversity corridors within the Mediterranean Basin Biodiversity Hotspot traversing the territory of Morocco: Coastal Atlantic Plains, Atlas Mountains Corridor, Rif Mountains, Mountains of Ksour and Djebel Krouz, Oranie and Moulouya (the last 2 linked Morocco with Algeria). However, section 9.2 did not further elaborate on the protection of these corridors, e.g., their spatial overlap with existing PAs of any national category.

The current size of the ecological network of Morocco cannot accurately be calculated, as the national PA network, the SIBE network (which current extent still requires verification), Ramsar sites' network, and biosphere reserves overlap (probably the same relates to the 'wildlife reserves' or 29 biological reserves).

6CBD NR noted that the NBSAP for 2016–2020 included the objective that "15 new protected areas will be created and provided with development and management plans" and that "SIBEs are in the process of being classified as a protected area, already have management plans, pending the decree implementing the law on protected areas", although did not clarify whether all 155 SIBEs are to be designated as PAs. It stated that "A network of 154 SIBEs, covering an area of 2,500,000 ha has been identified. Of these 154, 30 have a development and management plan".

Solely for the purposes of this assessment, the aggregated total area encompassed by 10 national parks (834,675 ha, according to 6CBD NR), ‘wildlife reserves’ (47,656 ha, according to 6CBD NR), and 155 SIBEs (79 terrestrial SIBEs of the continental area, 38 coastal SIBEs, and 38 wetland SIBEs of the continental area), hence further 1,247,000 ha (according to CHM data) shall be accounted as the total area covered by PAs of national categories in Morocco, which would then equal to 2,129,331 ha of the total PA (or 4.7684 per cent of the country’s territory). It should be noted that the area of the above ‘wildlife reserves’ probably overlaps with SIBEs’ area.

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219 L’objectif fixé dans la SPANB (2016–2020) est « 15 nouvelles aires protégées seront créées et munies de plans d’aménagement et de gestion ».

220 Les SIBE en cours de classement en aire protégée, disposent déjà de PAG, en attendant le décret d’application de la loi sur les aires protégées.

221 Un réseau de 154 Sites d’Intérêt Biologique et Écologique (SIBE), couvrant une superficie de 2 500 000ha a été identifié. Parmi ces 154, 30 disposent d’un plan d’aménagement et de gestion.

222 http://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma/sibe_cont_ter

223 http://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma/sibe_cont_lit

224 http://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma/sibe_cont_hum
North Macedonia

As for North Macedonia, comprehensive information on trends in the development and management of ecological networks was provided in 3EPR sections 11.4 and 11.5.

Data on PAs designated under the national categories in table 11.1 indicated that in 2012–2017 the area of strict nature reserves (IUCN cat. Ia, providing for the most effective protective regime, restricting human interference and economic uses of the area) decreased by 2,959 ha, thus by 27.7 per cent. Another PA category which noted significant decrease over the above period were protected landscapes (IUCN cat. V), their number dropped from 3 to 1, in result their area decreased by as much as 98.1 per cent (from 5,387 ha in 2012 to only 102 in 2017). The above could not be compensated by the designation of 10 new monuments of nature (IUCN cat. III), the area of these PAs increased in 2012–2017 by 8,515 ha (by 12.09 per cent). As of 2017, the national PA network including 86 PAs, encompassed the total area of 229,719 ha (which accounted for 8.93 per cent of the country’s territory), 50.03 per cent of which was inside 3 national parks (IUCN cat. II). The above indicated the slight declining trend since 2012, when the national PA network encompassed 232,496 ha (or 9.04 per cent of the country’s territory).

Furthermore, section 11.4 indicated that the comparatively high share of areas designated as monuments of nature (34.36 per cent of the PA network area, and 3.07 per cent of the country’s territory, as of 2017) was due to the proclamation of vast aquatic ecosystems of the three largest natural lakes in the country (Ohrid, Prespa and Dojran) under this PA category. Section 11.4 emphasized also the still missing ecological continuity and connectivity of the national PA network, resulting from its scattered spatial distribution pattern (map 11.1) and general lack of ecological corridors, linking existing PAs (except for the Multipurpose Area “Jasen”, which is a corridor linking 2 monuments of nature: Belesnishka Reka and Matka Canyon). Surprisingly, map 11.1 provided by the Ministry of Environment and Physical Planning did not indicate the location of national parks.
Moreover, the national PA network was not coherent in terms of legal categorization, by including areas proclaimed in different periods, in accordance with different categorization systems due to changes in the legislation. In result, as of 2019, the PA network included 2 new PAs recently proclaimed (in accordance with the new categorization) and 84 PAs proclaimed in accordance with the old and no longer valid categorization. The obligatory revalorization and reproclamation procedures (due to be completed by 2011) were finalized, as of 2019, only for 4 monuments of nature, and 2 nature parks. Hence, the vast majority of PAs (78 out of the total 86) had not been reproclaimed by 2019. According to the 2018 NBSAP for 2018–2023, the process of PA reproclamation (Action 11.1.2) is to be completed by 2023, which should therefore possibly be verified under the fourth EPR cycle.

2020 VNR of North Macedonia and the official Ministry of Environment and Physical Planning website\(^{225}\) (as of May 2021) both presented outdated 2016 information on PAs (the source was the National Strategy for Nature Protection with Action Plan for 2017–2027). (Ministry of Environment and Physical Planning, 2018). Unfortunately, the 2020 6CBD NR by North Macedonia again presented the same outdated information on its PA network, as of 2016.

3EPR section 11.5 reported on several subsequent plans on the extension of the national PA network in North Macedonia. The 2004 Spatial Plan stipulated the designation of “5 national parks covering a total area of 188,196 ha, 8 strictly protected natural reserves with an area of 13,682 ha, 38 scientific and research natural reserves – 11,836 ha, 6 areas with special natural properties – 13,966 ha, 1 specific landscape of 200 ha, 26 specific natural reserves – 5,155 ha, 14 individual flora and fauna species – 2,645 ha and 167 monuments of nature covering an area of 62,886 ha” by 2020, including the designation of 2 new national parks, Jakupica (28,000 ha), and Šar Planina (51,858 ha). If implemented, the national PA network would encompass 298,566 ha (11.61 per cent of the country’s territory).

Section 11.5 also mentioned the proposal for the establishment of an ecologically representative and more spatially coherent (map 11.2) “National Ecological Network” (MAK-NEN), expected to include 99 PAs (34 existing, 42 new PAs proposed by the 2004 Spatial Plan, and 23 newly identified areas), supplemented by 91 localities proposed for proclamation as ‘natural rarities’, which could encompass some 20 per cent of the country’s territory. According to the 2018 NBSAP for 2018–2023, the adoption of MAK-NEN and its incorporation into planning documents was expected already in 2018 (Action 10.5), but the consultations on the MAK-NEN proposal (submitted to the Government by the Macedonian Ecological Society in 2013) had not been finalized by 2019, most probably due to ongoing identification of sites suitable for their future inclusion into the EU Natura 2000 network.

In the course of the self-assessment in 2020 North Macedonia noted the ongoing procedures for the designation of PAs in Šar Mountains and Osogovo Mountains, as well as the continuation of procedures for the proclamation and re-proclamation of PAs and natural rarities (see also the previous sub-section 1.4).

Section 11.5 reported on the progress concerning the future designation of Natura 2000 sites in North Macedonia, in 2016–2017 the first 11 suitable areas were identified, including 8 potential SCIs (Galičica, Jakupica Mountains, Mariovo and Kozuf, Mavrovo, Ovce Pole, Pelister, Šar Planina, Uvavica Cave) and 3 potential SPAs (Lake Dojran, Lake Ohrid, Lake Prespa), which spatial distribution was demonstrated on map 11.5. As of 2019, field research aimed at the identification of 3 new potential Natura 2000 sites in the eastern part of the country was ongoing. According to the 2018 NBSAP for 2018–2023, the identification of potential Natura 2000 sites is due to be completed by 2022 (Action 11.2).

In 2020, in the course of the self-assessment process, North Macedonia noted the potential 8 SCIs and 3 SPAs and on the ongoing site identification works, in particular focused on the eastern part of the country (it should be noted that more detailed information on the above, mentioning names of these potential 8 SCIs and 3 SPAs, and the number of potential sites in the eastern part of the country was already available

\(^{225}\) \url{www.moepp.gov.mk/?page_id=3413&lang=en}
in 3EPR). North Macedonia also noted that 2 Natura 2000 management plans had been drafted, for the Prespa Lake Monument of Nature, and Pelister National Park.

Hence, the progress in the extension of the national ecological network, and preparatory works for the designation of Natura 2000 network (possibly accommodating the MAK-NEN concept) should be assessed after 2022/2023, thus already under the fourth EPR cycle.

Prior to the planned future designation of Natura 2000 network, North Macedonia designed its national Emerald Network, by nominating 35 ASCIs, encompassing 29 per cent of the country’s territory (map 11.3). 12 out of these 35 ASCIs were existing PAs: 1 strict nature reserve (Tikvesh), 3 national parks (Galičica, Mavrovo, and Pelister), 7 monuments of nature (Lake Dojran, Lake Ohrid, Lake Prespa, Markovi Kuli, Matka Canyon, Orlovo Brdo, Smolari Waterfalls), and 1 nature reserve (Ezerani). However, all the above proposed ASCIs remained on the List of officially nominated candidate Emerald Network sites as of December 2020, hence have not yet been officially adopted under the Bern Convention.

At the time of the 3EPR North Macedonia harboured 2 Ramsar sites (Lake Dojran and Lake Prespa, both designated even prior to 2EPR) together encompassing 21,616 ha. According to RSIS, the above did not change until 2021, so that the nomination of Lake Ohrid (planned for 2018, as stipulated by Action 11.3.1 of the 2018 NBSAP for 2018–2023) has not yet taken place. Similarly, no new World Heritage sites of North Macedonia were inscribed on the WH List (the ‘mixed’ Lake Ohrid inscribed in 1979 has been extended in 2019 to include Albania), however in January 2019 the proposal concerning the inclusion of the beech forest Dlaboka Reka (located inside Mavrovo NP) into the “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe” transnational World Heritage property has officially been submitted. Moreover, the 2 previously proposed other potential ‘natural’ WH properties (Cave Slatinski Izvor and Markovi Kuli) remain on the Tentative List since 2004. The Ohrid-Prespa Transboundary Biosphere Reserve (shared with Albania) remains, as of 2021, the only UNESCO MAB biosphere reserve in North Macedonia, although the identification of other areas suitable for such nomination was planned by 2020 (2018 NBSAP for the period 2018–2023, Action 11.3.3).

Due to the above, the progress towards the designation of Lake Ohrid as a Ramsar site, the inscription of 3 new ‘natural’ World Heritage properties (Cave Slatinski Izvor, Dlaboka Reka, and Markovi Kuli), and the nomination of new UNESCO MAB biosphere reserves in North Macedonia (pursuant to 2018 NBSAP for 2018–2023) should possibly be assessed under the fourth EPR cycle.

3EPR section 11.5 also mentioned Important Bird Areas (IBAs) with a total area of 681,388 ha (which accounted for 26.5 per cent of the country’s territory) and 42 IPAs identified in North Macedonia, as well as the Balkan Green Belt initiative, including 11 PAs (e.g., 3 national parks) and areas proposed for protection in mountain ranges of Šar Planina, Jablanica, Nidze, Kozhuf, Belasica and Osogovo (map 11.4).

227 [https://whc.unesco.org/en/decisions/7366](https://whc.unesco.org/en/decisions/7366)
Romania

The draft 3EPR of Romania, section 11.4 in table 11.13 presented data provided by the National Institute of Statistics, concerning trends in the total area covered by different national PA categories in 2012–2019, according to which the total area of national parks increased from 316,872 ha in 2012 to 317,419 ha in 2016–2019 (thus, only by 0.17 per cent). According to data from the NANPA website, the above area did not change until 2021. According to table 11.13 and the above recent data by NANPA, the total area of natural parks decreased from 772,810 ha in 2012 to 770,027 in 2016–2019, and 769,373 ha which means only 0.44 per cent decrease, while the total area of nature reserves and natural monuments decreased from 362,733 ha in 2012 to the current 292,125 ha (by 19.47 per cent). However, it seems that out of the strictly protected 79 scientific reserves covering 100,574 ha (as reported by Romania in its 2018 VNR) only 32 remained, encompassing only 16,659 ha in total (as currently indicated on the NANPA website), meaning a decrease by 83.44 per cent, which is a negative trend, moreover, affecting PAs of the highest protective regime (IUCN cat. Ia).

As for the representativeness of the national PA network, section 11.4 reported that nature reserves “were designated based on summary templates without a support of scientific studies, which in some cases led to predominantly common species being included in protected areas while vulnerable species were left in adjacent areas”.

As of early 2021, according to the website maintained by the National Agency for Natural Protected Areas (NANPA) of Romania, the national PA network included 32 scientific reservations (16,659 ha in total), 13 national parks (317,419 ha), 916 nature reserves and monuments (292,125 ha), and 16 natural parks (769,373 ha), which would then total for 977 PAs encompassing the total area of 1,395,576 ha (5.854 per cent of the country’s territory, if no spatial overlaps between different PA categories occur).

3EPR section 11.4 noted that “According to the European Environment Agency (EEA), 23.4 per cent of the total territory of the country is under the protected area system, 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”, although did not further elaborate on the above, and clarify how the above numbers were calculated, also in order to avoid spatial overlaps between different national designated areas and e.g., biosphere reserves or Ramsar sites (which number and total areas were also indicated in table 11.12 “Protected area categories”).

As an EU MS, Romania contributes to the EU Natura 2000 network, with 171 SPAs and 435 SCIs, despite that 2018 VNR by Romania mentioned also “442 Sites of Community Importance”. As for their size, data discrepancies again occur, as the 2018 VNR by Romania noted “Special Protection Areas – 171, occupying an area of 3,649,300 ha” and “Sites of Community Importance – 435, occupying an area of 4,031,100 ha”, NANPA data indicated 3,875,298 ha in SPAs and 4,630,819 in SCIs as of 2019 (table 11.12), the data by the National Institute of Statistics indicated 3,875,298 ha in SPAs and 4,650,970 in SCIs as of 2019 (table 11.13), while the current (?) data by NANPA indicate only 3,550,811 ha in SPAs and only 4,005,110 ha in SCIs.

2018 VNR by Romania noted that “the total area of Natura 2000 sites, in relation to the country area, is 25%”, which does not seem to be accurate. 3EPR section 11.5 noted that “According to the EEA (2020), Romania has 171 Special Protected Areas (SPAs) and 435 SCIs 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”. The above, compared to data from table 11.12, allows the calculation that approx. 24,684 km² (thus some 40.75 per cent) of the area of Natura 2000 sites in Romania is simultaneously bearing both designations (SPA and SCI).

As for the recent Natura 2000 network development in Romania, section 11.5 noted that “between 2012 and 2020, additional 4,902 km² of areas were designated” (according to table 11.13 containing data for 2012–2019, the total area of SCIs increased by 5,036 km², while SPAs increased by 1,765 km²). The spatial distribution of PAs in Romania was demonstrated on map 11.1 provided by NANPA, which indicated that SPAs designated under the Birds Directive (referred to as “Avifauna protection areas” in the legend of the NANPA map) and Sites of Community Importance (SCIs) largely enhanced the ecological connectivity of the national PA network, serving as ecological corridors for other species than just birds.

However, 3EPR Chapter 1 (on legal, policy and institutional framework) emphasized that “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”.

Section 11.5 reported (table 11.14) that 90 SPAs and 218 SCIs had Natura 2000 management plans as of 2019, while the NANPA website notes that only 74 SPAs and 164 SCIs had such (which indicates that the data on NANPA website are not necessarily regularly updated).

As for international designations, section 11.5 noted 20 sites designated (as at July 2020) as Wetlands of International Importance (Ramsar Sites) encompassing the total area of 1,175,880 ha, and that 12 of the above sites had been designated since 2012 (which therefore increased the Ramsar sites coverage since 2EPR by 252,283 ha). 3EPR Chapter 6 on implementation of international agreements and commitments reported that 15 Ramsar sites had a management plan but not all were being implemented and that “an assessment of their effectiveness was never carried out, although some conclusions could be drawn from the monitoring of Natura 2000 sites (as all Ramsar sites designated in Romania overlap with the Natura

2000 network by at least 90 per cent)”. As of early 2021, according to RSIS, the number and total area of Ramsar sites in Romania has not changed since 3EPR.

Section 11.5 reported on 2 World Heritage properties designated under the ‘natural’ criteria, Danube Delta (in 1991) and part of the transnational property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”, recently extended in July 2017 (since then involving already 12 countries), when Romania contributed with 8 plots of the total area of 24,002.77 ha (which accounts for 26.08 per cent of the area of this WH property, totalling for 92,023.24 ha234) and additional 64,476.66 ha of the buffer zone (which therefore accounts for 25.4 per cent of its buffer zone, totalling for 253,815.38 ha). 3EPR Chapter 6 also noted that potentially four other ‘natural’ criteria (Massif du Retezat,235 Pietrosul Rodnei,236 Codru secular Sălția,237 Sinpetru,238) remained since 1991 on the WH Tentative List by Romania, but their possible nomination was still pending. Therefore, the progress towards the designation of the above 4 ‘natural’ properties should possibly be assessed under the fourth EPR cycle.

As for UNESCO MAB biosphere reserves, section 11.5 noted the Danube Delta BR (although did not mention that it is a transboundary biosphere reserve, shared with Ukraine), Retezat, and Pietrosul Mare Biosphere Reserves, and the procedure concerning the last two (both designated in 1979), related to their ‘pre-Seville’ design, as Retezat BR239 (38,047 ha) and Pietrosul Mare BR240 (44,000 ha) are strictly protected and non-inhabited. The Romanian part of the Danube Delta BR241 extends over 683,000 ha (580,000 ha terrestrial, and 103,000 ha marine), in result all 3 biosphere reserves together cover 765,047 ha of the Romanian (terrestrial and marine) territory (or, 662,047 ha solely terrestrial), although 2018 VNR by Romania reported only on “664,446 ha”, while according to table 11.15 the area of biosphere reserves accounted for only 661,939.96 ha.

It should be noted that in the paragraph beginning from a 2-sentence long description of the Danube Delta Biosphere Reserve, and ending by mentioning its UNESCO World Heritage status, section 11.5 for unknown reasons described the whole hydrological network of Romania, paying particular attention to caves (“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”), which do occur in the southwestern part of the country, but definitely not in the Danube Delta.

3EPR section 11.4 also mentioned 2 ‘geoparks’ (initiative ratified in 2015 by UNESCO242) of the total area of 208,392 ha, according to NANPA website these are Dinosaurs Geopark Țara Hațegului243 and Mehedinți Plateau Geopark.244

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234 https://whc.unesco.org/en/list/1133/
236 https://whc.unesco.org/en/tentativelists/558/
238 https://whc.unesco.org/en/tentativelists/559/
239 https://en.unesco.org/biosphere/eu-na/retezat
240 https://en.unesco.org/biosphere/eu-na/pietrosul-mare
241 https://en.unesco.org/biosphere/eu-na/danube-delta
243 www.hateggeoparc.ro/new/
244 www.geoparcmehedinti.ro/
Serbia

In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR of 2019, which noted that “In 2018 compared to 2010, percentage of areas under category IV decreased from 37 % to 25 %. Other categories more or less increased, or has retained the same proportion” (indicators provided by SEPA for 3EPR Annex III “Key data and indicators available for the review” retained the same values throughout 2010–2013 time series, hence the above changes might occur after 2013). According to Fig. 2.1.1.1. the share of IUCN category I PAs remained between 2010 and 2018 at the 0 per cent level, while the share of IUCN cat. II (national park) increased from 14 to 22 per cent, cat. IV (habitat or species management area) decreased from 37 to 25 per cent, while cat. V (protected landscape or seascape) increased from 44 to 51 per cent.

According to the Central Register of Protected Natural Resources, in early 2021 Serbia harboured 469 PAs, covering 677,950 ha or 7.66 per cent of the country’s territory (if properly calculated, this would account for 7.6725 per cent). The geographical distribution of PAs is demonstrated on the interactive map provided by the Institute for Nature Conservation of Serbia, publicly available online,245 which indicates the scattered pattern of the national PA network, which ecological connectivity could possibly be much higher mainly in the more afforested and mountainous southern part of the country, much less in the northern more urbanized and agriculturally used plains.

As for the planned development of the national PA network, 3EPR Introduction reported that “An additional 117 areas are within the protection procedure”, which is quite important for providing at least preliminary legal protection, as the 2019 6CBD NR explained that, according to national legislation, all sites with finalized studies concerning their protection, even if not yet formally designated, were considered in Serbia as PAs (which, if truly effective on the ground, would definitely be a best practice example), and stated that “Institute for nature conservation of Serbia and Provincial institute for nature protection prepared studies

245 https://cloud.gdi.net/visios/zzps
of protection and revision for 89 more protected areas, total surface 110 030 ha. So we can consider total protected area represents 8.82 % of total territory of Serbia”. However, 6CBD NR did not clarify how many of the above 89 PAs were the newly proposed ones, nor explain why the surface of PAs where such studies were only revised (hence, already designated PAs) shall increase the previously given total PA network area, and PA share in the country’s territory.

In the context of increasing “the total protected surface” 6CBD NR noted that “According to the Spatial plan of Serbia an increase of up to 12 % of the total territory has been envisaged until 2021”. Therefore, the progress in the implementation of the above 2010 Spatial Plan for the period 2010–2020 (OG 88/10) by achieving the above target value of the PA per cent share in the country’s territory (from the current 7.67 to 12 per cent in 2021), and the further extension and improvements (e.g., in terms of ecological representativeness and connectivity) of the national PA network in Serbia should possibly be assessed after 2021, under the fourth EPR cycle.

The suggested future assessment can benefit from the information, that as of early 2021, according to the Central Register of Protected Natural Resources, 33 new areas (1 strict nature reserve, 5 special nature reserves, 13 monuments of nature, 2 protected habitats, and 2 nature parks) were undergoing the designation process245 (which means that studies on their protection had already been submitted to relevant authorities, the Ministry posted a relevant document at its website to inform the public, so that such areas are already considered protected, and the measures prescribed in the study on protection shall apply until the adoption of the act on designation), including proposed Kosanica – Đavloja varoš special nature reserve (2,241.27 ha), Uvac special nature reserve (11,746.19 ha), Mojstirsko – Draške Mt. nature park (10,822.36 ha) and Sargan – Mokra Gora nature park (11,379.78 ha). Furthermore, the Institutes for Nature Conservation have submitted246 studies on protection concerning 27 proposed areas (however, not yet posted on the MEP website, which initiates the designation process) which include 1 special nature reserve, 21 monuments of nature, 3 protected habitats, and 2 outstanding natural landscapes. However, it should be noted that the proposed Uvac special nature reserve (of 11,746.19 ha), apparently already under the designation process, is simultaneously indicated in both above categories, which indicates that the data published in the Central Register are not always internally harmonized.

As for trends in the development and management of an ecological network in a broader meaning, 3EPR Chapter 1 noted that “The Regulation on the ecological network (OG 102/10) lays down the manner of protecting, managing and funding of the ecological network or ecologically important areas and ecological corridors of national and international importance, including Emerald and Natura 2000 sites. It covers 101 ecologically important areas of international and national importance”. Basing on the above information, 3EPR Introduction stated, “The ecological network consists of 101 areas of ecological importance and ecological corridors of national and international importance, including Emerald Network and Natura 2000 sites” (despite that Natura 2000 sites have not yet been designated in Serbia, which, as of 2021, is still an EU candidate country). Similarly, 6CBD NR noted that “The ecological network of Serbia is comprised of 101 areas and it represents an assembly of functionally connected or spatially close ecologically significant areas”.

However, in light of the total number of PAs (3EPR Introduction reported on 474 PAs in Serbia, while 2019 6CBD NR noted 459 PAs) none of the above sources explained why only 101 areas constituted the ecological network in the country (while the remaining 373 or 358 PAs were apparently not considered as ecologically important), which categories these 101 PAs represented, how were such “functionally connected or spatially close” (to form a coherent network), which particular PAs or PA categories functioned as “ecological corridors of national and international importance”, and to what extent such ecological network was ecologically representative (covering at least the best preserved areas of all main natural ecosystems representative of Serbia). The above can probably be clarified under the fourth EPR cycle.

245 www.zzps.rs/wp/u-postupku-zastite/?lang=en
246 www.zzps.rs/wp/poslata-na-usvajanje/?lang=en
3EPR Chapter 1 on legal and policymaking framework and its practical implementation and Chapter 5 on implementation of international environmental agreements noted that Serbia selected 61 candidate areas for the Emerald Network, encompassing 1,019,269 ha (which accounted for 11.54 per cent of the country’s territory). Chapter 1 further explained that most of these potential ASCIs areas “have been granted the status of protected areas at the national level, and a number of them are protected at the international level” (although did not further elaborate on the possibility of granting the legal protection “at the international level”, which is basically limited to the EU Natura 2000 sites, and World Heritage properties - see methodological remarks).

According to the Council of Europe, as of December 2020, Serbia officially nominated 61 potential ASCIs, for possible inclusion to the Emerald Network.  

3EPR Chapter 5 noted the designation of 4 new Ramsar sites since 2007 (table 5.1) encompassing the total area of 35,894 ha, and that as of April 2014 Serbia had 10 sites designated as wetlands of international importance, with a total area of 63,919 ha. Chapter 5 also provided a detailed description of these 4 new sites.

In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR of 2019, which noted that 10 Ramsar sites covered the total area of “615.22” ha (in fact the proper value as of 2019 was 63,886 ha according to the Ramsar Sites Information Service, RSIS).

According to RSIS, as of early 2021, Serbia already had 11 Ramsar sites of the total area of 130,411 ha (1.48 per cent of the country’s territory), including Djerdap (66,525 ha) Ramsar site designated in June 2020, overlapping with slightly smaller (63,786.48 ha) Đerdap National Park (located at the state border with Romania).

3EPR Chapter 5 reported on 4 properties inscribed on the World Heritage List and further 11 submitted on its Tentative List.

According to UNESCO, as of early 2021 Serbia had no ‘natural’ or ‘mixed’ WH properties inscribed, but already 12 on the Tentative List, incl. 6 ‘natural’ sites: Djerdap National Park, Mt. Sara National Park (the latter in Kosovo and Metohija Autonomous Province under United Nations Security Council resolution 1244), the Tara National Park with the Drina River Canyon, the Deliblato Sands Special Natural Reserve, the Djavolja Varos (Devil’s Town) Natural Landmark (all 5 remaining on the tentative list since March 2002), and a more recently proposed extension of the transnational property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe” (submitted in January 2019). The progress towards the designation of the above ‘natural’ properties should possibly be assessed under the fourth EPR cycle.

3EPR Introduction noted that in 2001 Nature Park Golija together with the surroundings of Studenica Monastery were designated as the UNESCO MAB Golija–Studenica Biosphere Reserve, and that in 2013 “the Serbian part of the future cross-border biosphere reserve Mura–Drava–Danube was nominated to UNESCO”.

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248 www.coe.int/en/web/bern-convention/emerald-network  
249 https://rsis.ramsar.org/ris/2442  
250 www.zzps.rs/wp/wp-derdap/?lang=en  
251 https://whc.unesco.org/en/tentativelists/1693/  
252 https://whc.unesco.org/en/tentativelists/1697/  
254 https://whc.unesco.org/en/tentativelists/1695/  
256 https://en.unesco.org/biosphere/eu-na/golija-studenica
In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR of 2019, which mentioned the Special Nature Reserve “Gornje Podunavlje” (located at the confluence of state borders of Serbia, Croatia and Hungary), and stated “In order to protect and conserve the entire floodplain, UNESCO declares this area for the MAB cross-border biosphere reserve “Bačko Podunavlje” in 2017”.

However, according to UNESCO, Bačko Podunavlje BR\(^{257}\) (176,635 ha) was designated in 2017 solely inside Serbia, not as a transboundary BR. As of early 2021, Serbia has only the above 2 UNESCO MAB biosphere reserves, jointly encompassing the total area of 230,439 ha (thus, 2.61 per cent of the country’s territory).

3EPR Chapter 5 reported on 42 Important Bird Areas (IBAs), 62 IPAs covering 8 per cent of the country’s territory, and 40 PBAs, covering 903,643 ha, or 10.23 per cent of country’s territory. The 2019 6CBD NR by Serbia stated that 42 IBAs were identified in 2009, encompassing the total area of 1,259,624 ha (which accounted for 14.25 per cent of the country’s territory), 40 PBAs of the total area of 903,643 ha (10.2 per cent), and 62 IPAs covering in total 747,300 ha (8.5 per cent of the country’s territory), and the proposed Prime Hoverfly Area outside of the Nationally Protected Area, expected to cover 1.36 per cent of the national territory of Serbia.

6CBD NR also mentioned that “in 2005, 59 habitats of international significance were preserved for the preservation of floral diversity. These habitats comprise 8.5 % of the territory of Serbia” (although did not further elaborate on which form of protection was granted in the last case, as of early 2021 the Central Register of Protected Natural Resources indicates the presence of 6 ‘protected habitats\(^{257}\) areas). The spatial distribution of sites forming the ecological network, IBAs, PBAs, ASCIs, Ramsar sites is demonstrated on maps provided by the Institute for Nature Conservation of Serbia in 6CBD NR, however the quality of these miniature maps does not allow to see required details.

As of early 2021, Serbia has already 79\(^{259}\) IBAs encompassing the total area of 2,579,364 ha (29.19 per cent of the country’s territory), the number of IPAs in Serbia is currently non-available in the Plantlife database.\(^{260}\) Nevertheless, it should be noted that the national PA network currently covers some 7.67 per cent of the country’s territory, not all IBAs or PBAs are included into existing PAs of national categories.

\(^{257}\) https://en.unesco.org/biosphere/eu-na/bacco-podunavlje

\(^{258}\) www.zzps.rs/wp/zasticena-stanista/?lang=en

\(^{259}\) http://datazone.birdlife.org/country/serbia

\(^{260}\) www.plantlifeipa.org/home
The 3EPR of Tajikistan briefly reported on trends in the development and management of ecological networks in section 8.5 and indicated in section 8.6 that the 2011 Law on Specially Protected Natural Areas regulated also issues related to the designation of PAs of international importance and provided for the designation of ecological corridors linking natural areas and protecting species migration routes.

Section 8.5 noted (table 8.2) that the national PA system included 4 state nature reserves (173,420 ha in total), 3 state nature parks (2,674,420 ha in total), and 13 nature preserves (313,240 ha in total), which jointly encompassed over 3 million ha (3,161,080 ha). It further mentioned 5 botanic gardens (731 ha in total), 13 botanic stations and field nurseries (10,000 ha in total), and 3 tourist-recreational zones (15,300 ha in total). Therefore, the total area under legal protection in Tajikistan (even without counting the small 26 state monuments of nature, generally absent in official statistics) accounted for some 3,187,111 ha (some 22.27 per cent of the country’s territory).

However, Tajik state nature park accounted for some 82 per cent of the whole above protected territory, while 13 nature preserves (which could probably be compared to IUCN category IV Habitat/Species Management Area) constituted further 9.89 per cent of the national PA system. Thus, the share of other PA categories (incl. most effective state nature reserves) accounted for slightly over 8 per cent, Section 8.5 indicated that small state nature reserves which could e.g., protect rare or endangered flora species were generally missing (while red-listed species could possibly occur also outside the existing large-scale PAs).

Unfortunately, the 3EPR did not include a map of the geographical distribution of PAs of different national categories, which could allow to assess the ecological connectivity of the national PA network. Nevertheless, maps available from other sources (e.g., 2015 FLERMONECA publication “The State of the
Environment in Central Asia: Illustrations of Selected Environmental Themes and Indicators\(^{261}\) justify the statement that except for 2 coherent PA complexes (the vast Tajik state nature park surrounding Muzkul and Sangvor nature preserves, and the Dashti Djum state nature reserve adjacent to Dashti Djum nature preserve) other PAs are scattered all around the country and remain not linked by any legally protected ecological corridors.

Section 8.5 stated that the establishment of an international transboundary nature park in the border area at the state borders with Afghanistan, China and Pakistan was planned in the period 2006–2010, however no information on the progress of this initiative was available at the time of the 3EPR.

As for international designations, the 3EPR noted 5 Ramsar sites (table 8.3) covering 94,600 ha in total, all designated in 2001 (thus, well before 1EPR).

According to RSIS, as of early 2021, the situation did not change. Furthermore, despite its designation 20 years ago, information on 1 Ramsar site (Lower part of Pyandj River\(^{262}\)) remains unavailable, in result RSIS still indicates its area as “0 ha”. Section 8.5 stated that, according to the 2014 National Report to the Ramsar Convention, Tajikistan planned to submit nominations concerning 6 new Ramsar sites (Iskanderkul, Nurek, Sarez, Syr Darya, Yashilkul and Zeravshan). Hence, the progress in the nomination of the above sites should possibly be assessed under the fourth EPR cycle.

Section 8.5 reported that Tajik National Park (Mountains of the Pamirs\(^{263}\)) was inscribed on the World Heritage List in 2013, and that 5 relevant potential sites (encompassing several PAs) were submitted to the Tentative List.

According to UNESCO, 1 ‘mixed’ (Fann Mountains\(^{264}\)) and 4 ‘natural’ (State reserve Dashti Djum,\(^{265}\) Tigrovaya Balka,\(^{266}\) Zakaznik Kusavlisay,\(^{267}\) and Zorkul State Reserve\(^{268}\)) potential WH sites (all submitted in 2006) remain on the Tentative List by Tajikistan. Therefore, the progress in the inscription of the above sites on the World Heritage List should possibly be assessed under the fourth EPR cycle.

The 3EPR Section 8.5 noted that no MAB biosphere reserves had been designated by UNESCO in Tajikistan, according to UNESCO this situation did not change (as of early 2021).

Section 8.5 also noted that the 5CBD NR mentioned that the Government adopted the document “Eco-Nets Development System of the Republic of Tajikistan on the Basis of ECONET”, but no information on its effects was available at the time of the 3EPR.

As Tajikistan did not provide the results of its self-assessment of the implementation of the 3EPR recommendations (possibly carried out in 2020), in order to update the above information on trends in development and management of ecological networks, its 6CBD NR\(^{269}\) (submitted in August 2019) has thoroughly been examined. Unfortunately, data concerning PAs available in the above 2019 national report were either outdated (table contains data from 1991–2014, while the 3EPR presented data for 2015) or internally contradictory.

6CBD NR stated that “Based on the values of the existing biodiversity in the protected areas, the Government of the Republic of Tajikistan extended the period of operation of all 13 natural reserves for the
next 10 years, and the reserve “Romit” was transferred to the status of the Biosphere Reserve”. Unfortunately, 6CBD NR did not mention the year when the legal status of 13 nature preserves had been prolonged. The above extension of the legal status indicates that 3EPR Recommendation 8.4, concerning necessary amendment of the 2011 Law on Specially Protected Areas so as to grant permanent legal protective status to all PAs most probably has not yet been implemented.

Furthermore, 6CBD NR did not elaborate on the ‘biosphere reserve’ status of Romit state nature reserve, although national PA categories do not include a ‘biosphere reserve’, while UNESCO has not yet designated any MAB biosphere reserves in Tajikistan.

6CBD NR indicated that the number of nature preserves (“zakazniks”) increased from previous 13 to 14, while their total area (313,240 ha at the time of the 3EPR) increased either by 20 ha (to 313,260 ha, as in 6CBD NR) or by 150 ha (to 313,390 ha, as in 6CBD NR). As the newly established Khutalon nature preserve (“zakaznik”) covers 6,000 ha, the above indicates that the total area of the remaining 13 “zakazniks” decreased by either 5,980 or 5,850 ha.

Furthermore, according to 6CBD NR, the total area of the 3 state nature parks also decreased, from 2,674,420 ha (as in 3EPR) to 2,633,508 ha (according to 6CBD NR) or only 2,606,805 ha. 6CBD NR information concerning “1 natural park with the area of 3508 ha” implies that the area of Sarikhosor state nature park decreased from 30,850 ha (as at the time of the 3EPR), hence by some 88.63 per cent. Moreover 8 “micro-reserves”) of the unknown total area were designated in Tajikistan. The above changes in the PA network, its composition and size should possibly be verified under the fourth EPR cycle.

After adjusting the 6CBD NR (information to PA categories defined by the national legislation of Tajikistan, its national PA network recently included 4 state nature reserves (173,418 ha), 3 state nature parks (2,606,805 ha), 14 nature preserves (313,390 ha), 26 state monuments of nature (no information on their total area was available), 5 botanical gardens (731 ha), 3 recreational zones (15,300 ha), and 13 non-categorized “botanical stations, strongholds and hospitals” (10,000 ha).

Thus, for the purposes of this assessment, following table on 6CBD NR it can be estimated that the total area encompassed by PAs of national categories accounts for 3,119,644 ha (compared to 3,187,111 at the time of the 3EPR) or 21.80 per cent of the country’s territory (22.27 at the time of the 3EPR), hence decreased by as much as 67,467 ha.

6CBD NR also contained a brief assessment of the effectiveness of the national PA network, stating that “Despite the valuable types of biodiversity preserved in natural ecosystems of protected areas, the system of protected areas is practically not improved, especially with a view to more effective conservation of flora and fauna in various ecosystems throughout the country. Existing protected areas are distributed unevenly across the country and do not reflect the entire natural diversity of the regions. At the same time, as it is established by the regional scheme for the development of the ECONET network of protected areas, often the territories of protected areas within the current boundaries do not cover a complex of valuable resources (flora, fauna, ecosystems), as neither territorial nor functional zoning has yet been carried out for the modern national network of protected areas. The existing network of protected areas has serious drawbacks that make it impossible to consider it as a complete system. The main drawbacks of the existing network of protected areas are: - Lack of a full range of different types of reserves; - SPAs do not represent the entire diversity of valuable natural ecosystems of Tajikistan and many valuable species and ecosystems remain outside the territory of SPAs; - The area of the majority of protected areas is insufficient for the actual implementation of conservation objectives; - There are no special land management documents for the majority of reserves, as well as real practical provision of the required protection regime”.

To summarize, 6CBD NR emphasized the disparities not only in the geographical distribution of PAs among different administrative regions, but also the missing ecological representativeness of the national PA network (not yet covering all representative ecosystems, important habitats and species), the lack of functional zonation in some PA categories, underdeveloped nature reserve system (also emphasized in
justification for the 3EPR Recommendation 8.2), limited size of the majority of PAs, missing PA management plans, and problems in effective law enforcement.

6CBD NR indicated also that that the designation of a separate Sangvor state nature park (planned in 2009) has probably be abandoned, instead it is planned to be incorporated into the Tajik state nature park (“Work is under way to change the conservation status of the Sangwor Reserve, to demarcate the boundaries of the Sangwor Reserve, and to further incorporate it into the Tajik National Park to ensure its representativeness and improve the protection of key species and ecosystems”).

6CBD NR included a map of 42 KBAs identified in Tajikistan, many of which did not spatially overlap with existing PAs.
Uzbekistan

The 3EPR of Uzbekistan assessed trends in the development and management of the national ecological network and networks established through international designations. According to the official statistics, as at 1 January 2019, the national PA system of Uzbekistan (without PAs of the national category VI) officially encompassed 13.2 million ha (29.4 per cent of the country’s territory).

However, the 3EPR emphasized that PAs of the national category VII (territories for the management of individual natural resources) made of the state forest fund lands (which included less than 29 per cent of actual forests) and the lands of hunting farms were prevailing (over 84 per cent of the total PA). Other PAs (of categories I–VI), protecting more evident natural values (than e.g., pastures and open areas considered potentially suitable for afforestation) encompassed only 2,079,898 ha (approx. 4.6 per cent of the country’s territory).

The most effective protection was ensured in PAs granted legal entity status, which had its own administration and field personnel (incl. rangers), i.e., in strictly protected state nature reserves, complex landscape reserve, also in strictly protected zones of nature parks and state biosphere reserves. As at March 2019, the total area encompassed by the above PA types (including other zones of nature parks and state biosphere reserves, as exact data on their functional zonation was non-available) accounted for 1,486,479.2 ha (thus, only 3.31 per cent of the country’s territory). Furthermore, over 42 per cent of such effectively PAs were located in the vast Saygachi complex landscape reserve, which main conservation objective was to protect the saiga antelope population, while its southward cross-border winter migration is no longer the case (would require transboundary cooperation with Kazakhstan), while 7 strictly protected state nature reserves jointly encompassed only 188,335 ha (0.42 per cent of the country’s territory).

The 3EPR reported that the national ecological network of Uzbekistan was not ecologically representative, protecting 14 per cent of mountain ecosystems (which stretch over only 13 per cent of...
the country), but only 3.5 per cent of desert ecosystems (which encompass a large part of the country and are therefore highly representative of Uzbekistan), and only 3 per cent of floodplain forest ecosystems. The national ecological network had also major disparities in PA geographical distribution, as almost all state nature reserves and nature parks were concentrated in the south-eastern part of the country, while the PA system was largely underdeveloped in the other regions of Uzbekistan (except the vast Saygachiya complex landscape reserve in the northernmost corner of the country), e.g., the mountain masses located in the central part of the Kyzylkum Desert remained non-protected. Moreover, PAs were not only unevenly distributed among the geographical and administrative regions, landscape and ecosystem types but also among botanical and zoological regions. In result, the national ecological network did not encompass the full geographical ranges of occurrence and habitats of several rare, endemic and threatened species, in consequence it preserved neither the whole phytocenotic and floristic nor zoological diversity of the country.

Furthermore, although map 11.2 presenting the geographical distribution of PAs of different national categories of Uzbekistan indicated that several PAs were adjacent to each other (e.g., 3 state “zakaznik” reserves located at the conjunction of administrative boundaries of Navoiy, Kashkadarya and Samarkand Oblasts, or PAs of different categories in the Turkestan Ridge and Western Tien-Shan Mts.), spatial linkages between PAs were largely missing and no ecological corridors for fauna migrations were designated (despite that some 24.16 per cent of the country’s territory was in 2018 classified as “reserve land”). However, this map indicated high potential for transboundary cooperation and ecological connectivity, due to the presence of several larger PAs in border areas, either surrounded by (Ugam-Chatkal, Chatkal) or located (Saygachiya, Surkhan, Zaamin) at the state border with the neighbouring countries.

As for the planned extension of the national ecological network, the 3EPR section 11.3 noted the Roadmap for the development of the PA system for the period 2019–2022 (2019 Resolution of the President No. 4247), which stipulated the designation in 2019–2022 of 5 PAs with a legal entity status, expected to encompass a total area of some 2.3–3 million ha in the Republic of Karakalpakstan (the Southern Ustyurt state nature reserve, and 4 state “zakaznik” reserves: Sudochye Lake System planned for designation in 2019, Beltau in 2020, Akpetki in 2021 and Akdarya-Kazakhdarya Mezhdurech in 2022), where the establishment of the Southern Ustyurt state nature reserve (approx. 1.4 million ha) adjacent to the existing PA in Turkmenistan and planned PA in Kazakhstan would enable the emergence of a coherent trilateral transboundary PA.

In 2020, in the course of the self-assessment of the implementation of the 3EPR recommendations, Uzbekistan stated that a draft resolution of the Cabinet of Ministers “On the formation of the state reserve Sudochye-Akpetki” in the Republic of Karakalpakstan has been prepared, and that the draft resolution “On approval of the Program for the creation and expansion of the system of protected natural areas in the Republic of Uzbekistan until 2028” has been prepared and was already at the stage of agreement with the interested ministries and departments.

In 2021 an important updated information emerged, according to UNESCO (see the information on the planned World Heritage transnational property “Cold winter deserts of Turan” below) the designation of Sudochye-Akpetki state “zakaznik” reserve (approx. 280,000 ha) and of Central Kyzylkum nature park (approx. 1,083,000 ha) of IUCN cat. II is planned for 2021, while the Southern Ustyurt is referred to as a nature park (hence, no longer a planned state nature reserve of IUCN cat. Ia) and its area (1,447,143 ha) is exactly defined (which implies that it could have already been designated).

Such recent designation of Southern Ustyurt nature park would increase the size of the national ecological network of Uzbekistan (without PAs of the national category VI) from 13.2 to over 14.6 million ha (and from 29.4 to 32.7 per cent of the country’s territory), while the total area covered by PAs of categories I–VI (without the state forest fund and hunting farms of the national category VII) would then increase from 2,079,898 ha to 3,527,041 ha (thus by as much as 69.58 per cent), while its share in the country’s territory would increase from some 4.6 to already 7.88 per cent.
It also implies that the resolution approving the “Program for the creation and expansion of the system of protected natural areas in the Republic of Uzbekistan until 2028” has successfully been adopted, and that the above Program is already being implemented on the ground. Therefore, the progress in the designation of the above-mentioned new PAs, and in the implementation of the above Programme should possibly be assessed under the fourth EPR cycle.

As many as 4 chapters of the 3EPR of Uzbekistan (Ch. 6 on the implementation of international agreements and commitments, Ch. 9 on water management, Ch. 11 on biodiversity and PAs, and Ch. 12 on energy and environment) reported on the existing 2 Ramsar sites, Lake Dengizkul (31,300 ha) and Aydar-Arnasay Lakes System (527,100 ha), both designated prior to 2EPR. Section 11.4 stated that none of the above had a valid management plan, that only the latter was partly protected in Arnasay state “zakaznik” reserve (63,300 ha), and that the proposal concerning a new Ramsar site (Tudakul and Kuymazar Water Reservoirs) submitted in 2016 was subject to revision, thus still pending.

As a result of the self-assessment on the implementation of the 3EPR recommendation 11.2 carried out in 2020, Uzbekistan stated that the inclusion of the Tudakul and Kuymazar reservoirs in the list of Ramsar sites was planned, pursuant to the Resolution Cabinet of Ministers of the Republic of Uzbekistan “On approval of the strategy for the conservation of biological diversity in the Republic of Uzbekistan for the period 2019–2028” (No. 484 11.06.2019.).

However, according to RSIS, Tudakul and Kuymazar Water Reservoirs site (32,000 ha) was designated in August 2020, as a result, Uzbekistan harbours already 3 Ramsar sites, jointly covering the total area of 590,400 ha.

3EPR section 11.4 noted the ‘natural’ trilateral transnational World Heritage property Western Tien-Shan inscribed in 2016 (528,177.6 ha in total, and a buffer zone of 102,915.8 ha) shared with Kazakhstan and Kyrgyzstan, which encompasses 7 PAs in 3 countries, including 35,724 ha in Uzbekistan. In 1996–2008 Uzbekistan added 3 ‘mixed’ (Ancient Termiz, Boysun, Sarmishsay) and 3 ‘natural’ (Gissar Mountains, Shokhimardon, Zaamin Mountains) potential WH sites to its Tentative List. However, since 2018 the Tentative List was subject to revision. Preparation of a nomination dossier for Gissar Mts. was scheduled for 2019–2020.

According to UNESCO, on 29 January 2021 Uzbekistan submitted the proposal for the nomination of its national part of the planned ‘natural’ World Heritage transnational property “Cold winter deserts of Turan” to its Tentative List. This potential site could include 4 large-scale PAs in Uzbekistan: existing Saygachiy complex (landscape) reserve, recently designated (?) Southern Ustyurt nature park, as well as Sudochye-Akpetki state “zakaznik” reserve and Central Kyzylkum nature park (designation of the last 2 is planned for 2021), encompass as much as some 3,438,443 ha (almost 7.69 per cent of the country’s territory).
Together with the Kazakhstan part,\(^{280}\) which can include Altyn-Emel National Park (307,653 ha) and Barsakelmes State Nature Reserve (163,126 ha), and the Turkmenistan part\(^{281}\) of this transnational WH property, which can include Bereketli Garagum State Nature Reserve (87,400 ha), Gaplangyr (Kaplankyr) State Nature Reserve (926,203 ha), and Repetek Biosphere State Reserve (64,600 ha, also a MAB Biosphere Reserve), if successfully nominated, “Cold winter deserts of Turan” WH property can cover the total area of 4,987,425 ha (which, compared to other 3EPR countries, is almost the size of the territory of Bosnia and Herzegovina) and become the largest WH site designated in 3EPR countries. Thus, the progress in the inscription of the above tentatively listed sites on the World Heritage List should possibly be assessed under the fourth EPR cycle.

3EPR section 11.4 noted the UNESCO MAB Chatkal Biosphere Reserve (referred to as “Mt. Chatkal” in UNESCO database), located in the western Tien-Shan Mountains, nominated in 1978, encompassing 68,842.4 ha in total (35,724 ha in the core zone, 5,197.6 ha buffer zone and 27,920.8 ha in transition area), and that the nomination of the Lower Amu Darya State Biosphere Reserve for inclusion in the UNESCO World Network of Biosphere Reserves was being prepared (as at March 2019). According to UNESCO, as of early 2021, the number of MAB biosphere reserves in Uzbekistan did not change.

Section 11.4 also noted the identification of 52 important bird areas (IBAs) with a total area of 2,230,186 ha (4.97 per cent of the country’s territory), and emphasized that, contrary to the national PA network, the IBA network included all landscape types representative of the country: 9 IBAs (1,133,365 ha) in desert ecosystems, 15 IBAs (373,910 ha) in wetland areas, 9 IBAs (371,631 ha) in desert-lake complexes, 12 IBAs (315,826 ha) in mountain areas, 3 IBAs (19,002 ha) in desert lowlands, and 4 IBAs (16,452 ha) ranging over tugai forests. However, only 17 of the 52 IBAs either partially or entirely overlapped existing PAs, while the remaining 35 IBAs were not under any legal protection. In 2021, according to BirdLife Data Zone, these 52 IBAs in Uzbekistan covered the total area of 2,462,782 ha.\(^{282}\)

Furthermore, section 11.4 also noted the identification of 36 KBAs in mountain regions of Uzbekistan, covering the total area of 2,683,000 ha (5.98 per cent of the country’s territory), where only 12 KBAs either partially or entirely overlapped existing PAs. However, the KBA identification works were carried out under the initiative focused on the Pamir and Tien-Shan Mountains, while the predominant (87 per cent) part of the territory of Uzbekistan is non-mountainous, hence the identification of KBAs in remaining regions of the country was pending.

According to KBA database,\(^{283}\) as of early 2021 Uzbekistan had already 54 KBAs identified, encompassing 3,279,000 ha, however only 5.56 per cent of the above was located entirely inside existing PAs, further 11.11 per cent KBAs partly overlapped with PAs, but the remaining 83.33 per cent was not protected.

**Conclusions**

Basing on the above gathered, more or less update information concerning both the national category PA networks and international designations assigned to areas located in 3EPR countries (perceived as a contribution of countries to different international ecological networks), the recent trends and current state of development of ecological networks can be analysed, and 3EPR country achievements can be compared.

Furthermore, the achievement of the Aichi Biodiversity Target 11 (By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed,
ecologically representative and well connected systems) can now be assessed, exactly right after the expiry of the deadline set by the CBD Strategic Plan for Biodiversity 2011–2020.

However, mostly due to missing data, country assessments and gap analyses, the ecological representativeness of national ecological networks cannot be assessed. Similarly, as mentioned in methodological remarks, the total size of PA territory in a particular country does not yet indicate whether e.g., the main refuges and mainstays of rare and threatened species, protected by the national legislation of this country, are adequately covered by its national system of PAs, preferably in PAs of a high protective regime (IUCN categories Ia and Ib). The above strict protection regime is particularly important for the preservation of threatened plant species and communities, occurring in numerous small refugia scattered all around the country, often located outside existing larger-scale PAs.

It should also be mentioned that defining the current spatial extent (total size) of national category PA networks was hardly possible for some 3EPR countries, due to the lack of publicly accessible credible information, which clearly indicates the need to establish, maintain and regularly update related national online databases.

The above general recommendation is additionally justified by the fact, that data concerning sites bearing international designations can always be retrieved from databases maintained by UNESCO, the RSIS, and EEA, even though such might sometimes contain not yet updated records. The EPR experts should also be aware that several other global online databases might not necessarily be credible and presenting accurate and update data (for the reasons of political correctness such ‘popular’ but misleading databases are not explicitly mentioned here).

For the above reasons, the up-to-date numbers concerning the total area covered by PAs of national categories, necessary for the comparison table below, came from different types of sources. For North Macedonia the most update available source was its 3EPR (informing on the total size of PA as of 2017). In case of Belarus, Bosnia and Herzegovina, Georgia, Montenegro, Romania, and Serbia such numbers were calculated on the basis of publicly accessible national statistics and online databases. For the Republic of Moldova, Mongolia, and Tajikistan such numbers were available in their recently submitted 6CBD NRs. In case of Bulgaria and Kazakhstan the most update information was provided in their VNRs (in the latter case the total area of ecological corridors has also been added). Albania provided relevant information directly to the ECE team in 2020, by informing on the progress in the achievement of CBD Aichi Target 11. In case of Uzbekistan the total PA, as of early 2021, was calculated taking into account the most recent PA designation (Southern Ustyurt nature park). The most complicated task was to estimate the number for Morocco, where data provided in national databases significantly differed from officially reported, while available information neither allowed to clarify the protective status of SIBEs and ‘wildlife reserves’ nor eliminate possible spatial overlaps between different categories of areas accounted as ‘protected’ (which would then increase the calculated number).

However, as explained in methodological remarks, due to large differences in the size of the 3EPR countries’ territories, only the ‘per cent share’ indicator (per cent share of the total area of PAs designated in accordance with the national legislation in the territory of a particular country) should be compared, in particular for the assessment of the progress towards the achievement of ABT11. Due to the above, the total area covered by PAs of national categories had to be determined for each 3EPR country.

Furthermore, the share of either Natura 2000 or Emerald Network in the country’s territory can be analysed and compared, with the reservation that Natura 2000 designation results in a legal protective status of an area, while (as explained in methodological remarks) the ASCI designation of a site which is not yet protected in accordance with the national legislation can only indicate the clear intention of a country to enhance the protection of a particular site by declaring it as a legally-established PA in the near future. It should be noted that both Natura 2000 and Emerald networks spatially overlap to a large extent with the network of PAs designated in accordance with the national legislation.
In the table below the per cent share of Natura 2000 network is distinguished with the use of a capital letter “N” preceding the indicator value, and letter “E” for Emerald Network respectively. In case of countries where no ASCIs have so far officially been adopted small letter “e” indicates the fact that official nomination of proposed potential ASCIs already took place (but the indicator value is not provided, as officially the Emerald Network does not yet exist in a country). Small letters “n/a” (not applicable) indicate that a particular country is neither an EU Member State (obliged to designate Natura 2000 sites), nor a Party to the 1979 Convention on the Conservation of European Wildlife and Natural Habitats (hence, not expected to contribute to the Emerald Network).

Furthermore, the table below indicates either the presence (marked with “+”) of PA external buffer zones in the national ecological network of particular country, or the lack of related information (marked with “?”). Next columns of the table indicate other features of the national ecological networks of the 3EPR countries: their ecological connectivity, the presence of transboundary PAs and involvement of a country in transboundary nature conservation initiatives, as well as the recent progress of countries in the designation of new PAs, Ramsar sites, UNESCO World Heritage properties and MAB biosphere reserves.

Progress achieved within the 3EPR reporting period is marked with the use of “+” sign, the lack thereof with “–”. The most recent new developments (after 3EPR) are marked with green “ isize” sign, while several other red signs mark different problem areas (the meaning of these alerting red signs is explained later).

### Table 1. Trends in development and management of ecological networks in EPR countries (since 2EPR, until early 2021)

<table>
<thead>
<tr>
<th>3EPR country</th>
<th>Area of PAs of national categories (in ha)</th>
<th>PA % share in territory</th>
<th>PA % share in N2000 / Emerald</th>
<th>PA extern buffer zones</th>
<th>Eco connect</th>
<th>Transbound PAs</th>
<th>New PAs</th>
<th>New Ramsar sites</th>
<th>New WH sites</th>
<th>new BRs</th>
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<td>natl. cat.</td>
<td>E14.60</td>
<td>N2000 / Emerald</td>
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<td>5.27</td>
<td>N 34.92</td>
<td>?</td>
<td>+</td>
<td>+</td>
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<td>–</td>
<td>+</td>
<td>+</td>
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<tr>
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<td>6.23</td>
<td>E 9.61</td>
<td>?</td>
<td>–</td>
<td>+</td>
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</table>

The analysis of the per cent share of the total area of legally established PAs in country’s territory indicates that as many as 5 out of 15 (thus one third) 3EPR countries have timely (by 2020) achieved the Aichi Biodiversity Target 11 (setting the minimum threshold of conserving at least 17 per cent of terrestrial and inland water areas). It should be reminded here that Natura 2000 sites are also designated in accordance with the national legislation (revised upon the transposition of the EU acquis) of the EU Member States.

These 5 countries which (until early 2021) exceeded the ABT11 minimum threshold for the protection of terrestrial and inland water areas are as follows:

1. Bulgaria (although only 5.27 per cent in PAs of national categories, but 34.92 per cent in Natura 2000 network)
2. Mongolia (34.71 per cent of country’s territory in special state PAs and local PAs)
3. Romania (although only 5.85 per cent in PAs of national categories, but 22.70 per cent in Natura 2000 network)
4. Tajikistan (over 21.80 per cent in PAs of national categories, of which 18.25 in one PA, Tajik state nature park)
5. Albania (18.24 per cent of country’s territory in PAs of national categories).

As clearly visible in the table, the obligation to designate Natura 2000 network in EU MSs (e.g., Bulgaria and Romania) results in an immediate increase of legally PA, in particular when the progress in the spatial development of the network composed of PAs of ‘national categories’ had previously been slow.

Furthermore, the progress in development of the Emerald Network indicates the potential further extension of the national PA network, although varies among the 3EPR countries. For example, the indicator value for Georgia can increase from the current 8.38 to 14.6 in case all officially adopted ASCIs are designated as PAs of the national categories. In case of the Republic of Moldova the spatial extent of its part of the Emerald Network indicates the clear priority for granting the legal protection for 9.61 per cent of the country’s territory (while the current share of the national PA network accounts for only 6.23 per cent).

Other 3EPR countries which are on track to achieve the ABT11 minimum threshold are Montenegro (13.41 per cent), Kazakhstan (10.84) and Belarus (10.05), while the lowest value of the ‘per cent share’ indicator has to be noted (with concern) for Bosnia and Herzegovina (2.89) and Morocco (4.77). Moreover, in case of Morocco the information on the development of its Emerald Network was missing, despite that the country is a Party to the 1979 Convention on the Conservation of European Wildlife and Natural Habitats.

However, it should be emphasized that the above achievements concern only the quantitative part of the ABT11 indicator (spatial extent of national PA networks), not yet its qualitative components (effectively and equitably managed, ecologically representative and well-connected systems).

Due to the above, other features of the ecological network should also be analysed and compared, e.g., the presence of legally designated external PA buffer zones, and the spatial eco-connectivity of the ecological network, also in transboundary context.

An important component of the ecological network (in particular for best preserved PAs of IUCN categories Ia, Ib, and II) are the legally designated external PA buffer zone/s, preventing and minimising adverse impacts of e.g., economic uses of areas surrounding PAs (as previously mentioned in methodological remarks, such buffer zones are required for UNESCO WH sites and MaB biosphere reserves).

However, the information on PA external buffer zones was missing in the majority of the 3EPRs. Most probably only 3 to 4 out of 15 EPR countries designated external PA buffer zones, such are already surrounding PAs in Kazakhstan, Mongolia and Uzbekistan. Belarus recently (2018) established its the National Ecological Network, which includes 7 PA buffer zones (although the legal status and protective regime of these areas still need to be clarified). No information on buffer zones was available for the remaining 11 EPR countries, despite that e.g., the legislation of North Macedonia stipulates the establishment of such zones. Hence, this subject should duly be investigated under the 4th and next EPR cycles.

Enhancing the ecological connectivity of the national PA network remains a challenge for most 3EPR countries. Successful ones include Bulgaria (where the designation of Natura 2000 network resulted in the emergence of a well-connected ecological network), Kazakhstan (which designated 4 legally protected ecological corridors for fauna migrations), Montenegro (which gradually forms several large-scale ecological corridors), Belarus (which National Ecological Network includes 34 ecological corridors), and the Republic of Moldova (where the spatial layout of its Emerald Network improved the connectivity between PAs, while the creation and reconstruction of ecological corridors and forest strips for the protection of agricultural land and connection of forest bodies enhanced connectivity at the local scale). In case of Mongolia, mostly due to the high level of naturalness of the territory and the low level of
urbanization, ecological connectivity of the PA network is not yet threatened (hence, marked as “n/a”), with few exceptions (fenced railways isolating wildlife populations, which adverse effects can still be mitigated by applying relatively simply technical solutions).

It should be emphasized here that the spatial connectivity of the ecological network cannot be analyzed in the absence of maps, demonstrating the spatial extent, distribution and layout of different components of the national ecological network, including PAs of IUCN cat. I and II (serving as the most important core areas), external buffer zones surrounding PAs of higher protective regime and “integrating PAs into the wider landscape and seascapes”, other national category PAs (perceived as steppingstones, buffer zones, or spatial linkages in the landscape), and ecological corridors protecting species migration routes, which provide for the overall coherency of the ecological network. Presenting such information in a user-friendly mode is not possible without providing maps, visualizing the above geographical features, as geography cannot properly function without cartography.

Maps of the national PA network were provided in less than a half of the 3EPRs (of Albania, Georgia, Kazakhstan, Mongolia, North Macedonia, Romania, and Uzbekistan), while maps of the planned ecological network were present in few 3EPRs (Belarus, Kazakhstan, and North Macedonia). It should be noted that, despite all efforts, no credible map of the PA network of Morocco has been found for the purposes of this assessment, not even in its 6CBD NR. Therefore, adding relevant maps is highly recommended for all 4th and next EPR cycles. However, maps with a range limited to just one country (without delineating PAs in neighbouring countries) would not yet allow to properly assess the transboundary ecological connectivity at the eco-regional scale.

Most 3EPR countries cooperate with neighbouring countries on enhancing the ecological connectivity at the larger, eco-regional level. However, PAs designated in Bosnia and Herzegovina, Republic of Moldova, and Tajikistan are not yet parts of any transboundary PA.

All 3EPR countries designated new PAs since 2EPR, while Kazakhstan, Serbia, and Uzbekistan further extended their national PA networks after their 3EPR. However, despite the new PA designation, some negative trends can be observed, e.g., the significant decrease (by 83.44 per cent) of the area encompassed by strictly protected IUCN cat. Ia scientific reserves, and also nature reserves and natural monuments in Romania; the 50 per cent decrease in the area of IUCN cat. III natural/nature monuments in Albania, or the decrease of the total PA in Tajikistan (partly due to 88.63 per cent decline of the area of Sarikhosor state nature park). Last, but not least, the slow progress of PA revalorization and reproclamation procedures in North Macedonia should be noted with concern.

Most 3EPR countries designated new Ramsar sites since 2EPR, one third (Georgia, Montenegro, Morocco, Serbia and Uzbekistan) did so also after 3EPR. The presence of transboundary Ramsar sites involving Belarus, Bulgaria, and Romania should also be noted (Ramsar sites in Albania and Montenegro at Lake Skadar/Shkodra, and in Albania and North Macedonia at Lake Prespa not yet have a transboundary status). However, the coverage of Ramsar sites by PAs of national categories remains insufficient in most cases, while the official Ramsar designation alone does not yet enhance the conservation of these sites. The development of Ramsar sites network slowed down in 4 EPR countries (Bosnia and Herzegovina, the Republic of Moldova, North Macedonia, and Tajikistan), where no new Ramsar sites were designated since 2EPR.

As for UNESCO World Heritage properties, most countries progressed during the 3EPR reporting period, either by obtaining successful designation for their sites (Albania, Bulgaria, Kazakhstan, Mongolia, Romania, Tajikistan, and Uzbekistan), or by adding new proposed sites to their Tentative Lists (Kazakhstan and Uzbekistan recently extended their Lists, already after 3EPR). However, no new World Heritage properties were recently designated or proposed by Belarus, Georgia (which proposed 4 relevant sites in 2007), the Republic of Moldova, and Morocco (which still has no ‘natural’ WH sites designated, although proposed 4 already in 1998).
New UNESCO MAB biosphere reserves were designated in 7 countries (Albania, Bulgaria, Kazakhstan, the Republic of Moldova, Mongolia, Morocco and Serbia), in the last 5 also after their 3EPRs. However, simultaneously as many as 4 'pre-Seville' biosphere reserves in Bulgaria were withdrawn in 2020 (in 3 cases no longer supported by the respective local municipalities), following 3 other biosphere reserves withdrawn in 2017, and 1 in 2002. It should also be noted, that no UNESCO MAB biosphere reserves had so far been designated in Bosnia and Herzegovina, Georgia, and Tajikistan (although the modern 'post-Seville' biosphere reserve concept does not restrict sustainable resource uses and economic activities, except for the strictly protected core zone, while an international designation by UNESCO could become an important location factor, driver and asset for e.g., local sustainable tourism development).

The above comparison table can also be used as a simple diagnostic tool for the evaluation of country achievements concerning the development of their national ecological networks (although not yet their "effective and equitable management", as stipulated by the Aichi Biodiversity Target 11).

According to this table, only four 3EPR countries were successful in almost all above analyzed related aspects:

- **Albania** (despite the still missing connectivity of its ecological network and decrease of IUCN cat. III PAs)
- **Bulgaria** (despite the recent withdrawal of several UNESCO MAB biosphere reserves, but harbouring well-connected and extensive Natura 2000 network, providing for the highest share of legally PA in the country's territory among all 3EPR countries)
- **Kazakhstan** (with ‘positive scores’ in all aspects, including the legal designation of external PA buffer zones and ecological corridors, on the right track to achieve the ABT11 target threshold)
- **Mongolia** (with ‘positive scores’ in all aspects, and the highest share of state and locally designated PAs in the country's territory among all 3EPR countries).

1.6. Legal, policy and institutional framework

1.6.1. Legal framework

Methodological remarks

Legislation concerning biodiversity conservation can really be simple, and actually does not require a simultaneous presence of a large number of separate laws (legal acts of the same hierarchy) concerning different components of nature (i.e. natural ecosystems, habitats, landscapes, plant communities, groups of species) and the maintenance, protection and restoration thereof.

For obvious reasons it is not enough to inscribe the common obligation on nature conservation into the Constitution, which is most often (if not always) the case, also in EPR countries. But in fact, nature conservation can be regulated by one single law, followed by more detailed by-laws regulating particular issues (e.g., listing species granted strict or partial legal protection, sustainable use of both protected threatened species and the widespread species, authorized purposes and allowed limits and methods for taking the wild species of plants, animals or fungi; categorization, designation and management of PAs, undertaking special protective measures, determining the scope of responsibilities and competencies of related different public authorities and state agencies, as well as providing the coherency of the institutional framework incl. mechanisms for coordination and harmonization of their activities).

Of course, such one single law concerning the whole complexity of biodiversity conservation subject can be long, especially if “too precise” (which can easily be avoided by regulating details in accompanying by-laws, which will also provide for enhanced stability of the main legislation and allow to avoid frequent revisions of the law).
Furthermore, in some cases such (possible) single law can become even longer, as a result of the requirement for the effective integration of concepts previously absent in the legislative tradition of a country, resulting from its newly accepted international commitments and obligations. For example, this is the case of the two 3EPR countries (Bulgaria and Romania) which joined the European Union in 2007, due to which their legislation on nature conservation had to integrate the provisions of the EU acquis regulating biodiversity and nature protection (in particular the “Habitats” and “Birds” Directives), which therefore added the Natura 2000 concept-related regulations to the set of previously binding national ones, as well as resulting in the simultaneous functioning of the two different, yet often overlapping PA networks within one country, the network of PAs of “traditional” national legal categories, and the Natura 2000 network sites (SCIs/SACs and SPAs). The above is also the case of the further four 3EPR countries (Albania, Montenegro, North Macedonia, and Serbia), which are the EU candidate countries, currently in the process of ‘transposing’ (or integrating) EU environmental acquis into the national legislation.

As for the other international commitments and obligations, resulting for example from the ratification and entry into force of multilateral environmental agreements (MEAs), their effect on the shape of national legislation depends on whether a reviewed country has a ‘monist’ or ‘dualist’ legal system. The latter approach requires that the international law is translated into national law in order to be binding, while provisions of the existing national law that contradict international law must be modified or eliminated. Hence, if a ‘dualist’ state accepts the MEA but does not adapt its national law accordingly, it therefore breaches its international commitments and obligations. Whereas in a ‘monist’ state the act of ratifying an international treaty immediately incorporates the international law into national law, such MEA automatically becomes part of national law of a country and can be applied directly (so that it does not require the explicit direct incorporation of their provisions into the national legislation).

Hence, the supremacy of international law over the national law is a rule in both dualist and monist system states, resulting from the provisions of the 1969 Vienna Convention on the Law of Treaties (UNTC), which entered into force on 27 January 1980. Therefore, should any gaps in the national legislation of a ‘monist’ state occur, such can adequately be compensated by the direct application of international agreements, incl. MEAs (e.g., the 1992 CBD).

In most cases each 3EPR country had a ‘standard set’ of laws concerning biodiversity conservation. However, the number of legal acts (e.g., laws) in force does not necessarily matter here, what really matters is that the legislation is coherent and enough comprehensive (leaving no gaps). Last, but not least, even the existence of perfect laws would not yet make any real change – effective law enforcement is the key.

It should be noted that the legal framework is not the main subject of the EPR chapter on biodiversity and PAs. Also due to the fact that each EPR report begins with Chapter 1 on legal, policy and institutional framework, which considers also legal acts related to biodiversity and PAs (hence, repetitions and overlaps can hardly be avoided). However, it cannot be expected that the general review of biodiversity-related legislation under the EPR Chapter 1 would go very much into details, with a special focus on issues specific for the EPR chapter on biodiversity and PAs – such should be analysed by an expert responsible for the latter chapter.

By definition of an EPR, the assessment undertaken under this sub-section of chapter on biodiversity and PAs should mainly focus of the performance and progress (e.g., adoption of new or revision of previously adopted legal acts) made by the reviewed country within the reporting period (since its previous EPR). However, possible shortcomings, deficiencies, and contradictions in the legal framework (regardless the year of law adoption) should also be tracked, identified, and indicated.

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https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31992L0043

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009L0147

Each EPR expert, prior to the review, receives the written “Explanatory note on drafting process”, which explicitly instructs all experts that “Every effort should be made to avoid merely summing up policies, strategies and laws or providing long lists of policy and legal elements without comment. Rather, it is important to describe and clarify the relationships among the various policies, strategies and laws, and assess their effectiveness”.

According to the above instruction, the short assessment below avoids listing laws and by-laws adopted in particular 3EPR countries and pays much more attention to the possible “added value” of reviewing the biodiversity-related legislation again (apart from the assessment done in Chapter 1), accordingly to the specific focus of the EPR chapter on biodiversity and PAs.

Such assessments should allow to identify possible shortcomings and deficiencies, and recommend the adoption of necessary amendments, or supplementing the legislation (as recommending possible improvements is the most important expected ultimate objective of conducting an EPR). As many as 13 out of 15 EPR countries addressed EPR recommendations concerning the improvement of their biodiversity-related legal framework, and quite often implemented such recommendations (see sub-section 2.1).

The short assessment below is mostly based on the analysis of the contents of sub-sections on legal framework present in 3EPR chapters on biodiversity and PAs, in few cases supplemented by the additional information, kindly provided by countries in late 2020 to the ECE EPR team, gathered in the course of their voluntary self-assessments, carried out between mid-July and 31 December 2020.

Results of legal framework assessment in 3EPR chapters on biodiversity and protected areas (supplemented by information from country VNR and provided in 2020 to ECE EPR team)

Chapter 9 of the 3EPR of Albania indicated that within the reporting period the main achievement was the further transposition of the EU Habitats and Birds Directives through the enactment of amendments to national laws and adoption of the secondary legislation. It also identified that despite the 2009 Law on the Protection of Medicinal Plants included most NTFPs but did not set quotas for their sustainable harvesting (which was an important deficiency, requiring supplementation of this Law), and that the national certification of forests had not yet been implemented. The accession of Albania to CITES in 2003 resulted in the adoption of the Law on the Rules and Procedures of International Trade of Endangered Species of Wild Fauna and Flora in 2008 (prior to 2EPR), the assessment of its effectiveness was planned in 2010, but was not performed until 3EPR due to human and financial constraints.

According to the 2020 self-assessment, Albania implemented 3EPR recommendation 9.3 concerning the legislation for the protection of identified high-nature-value forests and NTFPs, by adopting the new Law on Forests (No. 57/2020, dated 30.04.2020), which “clearly emphasizes the need for Forest Certification”.

In Belarus, according to 3EPR Chapter 7, the biodiversity-related legislation was quite complex, including several separate laws (e.g., on environmental protection, specially protected natural areas, plant world, plant protection, and wildlife), however mostly adopted prior to 2EPR, except for the 2007 Law on Wildlife which defined measures for the protection of wild animals and their habitats (including rare and endangered animal species), but also regulated hunting and fishing, and the control of IAS. Other recently (2013 and 2014) adopted legal acts concerned hunting, fishing, monitoring of fauna populations, valuation of ecosystem services, and protection of plant and animal species included in the Red Book of the Republic of Belarus, all above potentially bringing positive effects for biodiversity conservation. The 1992 Law on Environmental Protection provided legal framework for establishing the national ecological network, while the 2010 Resolution of the Council of Ministers No. 1733 (revised by the 2014 Resolution of the Council of Ministers No. 1066) defined requirements for the composition of the national ecological network and criteria for selecting potential areas for inclusion into this network.

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According to 2017 VNR by Belarus, the country was developing its national legislation concerning landscape diversity conservation, which is definitely a good practice example for the other countries.

3EPR Chapter 11 of Bosnia and Herzegovina stated that biodiversity conservation in both entities and BD was regulated by the Law on Nature Protection and the Law on Environmental Protection. Moreover, separate laws were adopted for the designation of particular PAs, and a number of resulting secondary legislation followed (however almost all legal acts mentioned in 3EPR had been adopted prior to 2EPR, except for the 2017 Law on National Park “Drina” and several rulebooks adopted between 2011 and 2017 in RS). Chapter 11 reported also that although the country is party to CITES, the legislation and implementation mechanisms concerning protection of the wildlife and prevention of illegal logging were missing (although illegal logging is not subject of the CITES). According to 3EPR, in 2011 the FBiH adopted the Regulation on Natura 2000, while a similar subsidiary legislation was missing in RS. The 2014 Law on Nature Protection of RS stipulated for the adoption of a regulation on the establishment of the ecological network.

3EPR Chapter 1 (on legal, policy and institutional framework) reported, that in RS the Law on National Parks (OG RS, No. 21/96, 75/10) obliged the ministry competent for the environment to provide preliminary protection of a natural area if the available data indicate that the area has characteristics of a PA if the procedure for protection has been initiated. The above solution (which is also applied in neighbouring Serbia) is definitely a good practice example for the other countries.

According to the 2020 self-assessment of the rate of implementation of the 3EPR recommendations conducted by Bosnia and Herzegovina (part concerning Recommendation 11.1), several subsidiary legislation acts (by-laws) were recently adopted, including a Rulebook on protection measures for strictly protected species and subspecies and protected species and subspecies (OG FBiH, No. 21/20) in the FBiH, and a Regulation on protection measures for strictly protected species and protected species (OG RS, No. 65/20) in RS, which means the implementation of 1EPR Recommendation 8.3 (a), concerning the adoption of by-laws for entity Laws on Nature Protection. Similarly, the information that “Council of Ministers of BiH adopted Decision on the conditions and the method for implementation of the CITES in BiH (OG BiH, 31/18)” indicates that 2EPR Recommendation 9.3 (c) has been implemented.

3EPR Chapter 9 of Bulgaria mentioned the process of transposing the EU environmental acquis into the national legislation after 2007, by amending and updating relevant laws (on environmental protection, biological diversity, PAs, plants protection, forestry) and secondary legislation. However, this process had not been completed by the time of the 3EPR, e.g., not yet concerning IAS. 3EPR reported on the limited administrative capacity to implement the legislation, insufficient funding and missing incorporation of environmental issues into the other sectoral policies (perceived more important), which hindered the application of EU regulations, and resulted in three infringement procedures (all related to PAs, either concerning the reduction of their territories, or improper authorization of infrastructural projects inside). Furthermore, several amendments to by-laws adopted within the 3EPR reporting period were mentioned, again all concerning PA management planning and operations.

As for Georgia, its 3EPR Chapter 6 mentioned numerous amendments adopted in 2010 and 2012 in favour of hunting, e.g., abolishing the fee for taking the wild species (including species on the Red List), allowing hunting in all state forests, and initially also in all PAs (later limited under the pressure by NGOs and international organizations to PAs other than national parks). Ambiguous wording of the revised legal acts justified the Government’s interpretation that commercial hunting of species included in the Red List was allowed. Furthermore, Chapter 6 reported on the possibility to re-designate some existing national parks to other PA categories, which will therefore authorize hunting in their territories. Moreover, limits, annual quotas, and fees concerning NTFPs collection were missing, while the simplification done in 2012 of procedures related to timber harvesting could prevent the effective law enforcement.

In the above context Chapter 6 mentioned the adoption of the 2013 National Forest Concept for Georgia, which could possibly enhance more sustainable forest management, despite that the above “Concept”,
being a policy document, would rather not influence the legislation in force. It should be noted that Chapter 6 mainly described amendments to the previously existing legal acts but did not elaborate more on the overall biodiversity-related legal framework (hence, legislation on species protection or PAs in Georgia was not even mentioned).

According to the 2020 self-assessment, the Parliament of Georgia adopted the new Forest Code in July 2020, which indicates the ‘fully implemented’ status of 2EPR Recommendation 9.2, as well as the ‘ongoing’ implementation status of the 3EPR Recommendation 11.2 (as the subsidiary legislation of the Code was still under development).

Furthermore, 6CBD NR (dated April 2020) noted that the draft law on biodiversity was prepared in 2013–2018 by the Ministry of Environment and Natural Resource Protection (currently the Ministry of Environmental Protection and Agriculture) with support of GIZ, that was under discussion, also due to the fact that the draft of June 2017 did cover agricultural biodiversity, was mainly focused on conservation and did not adequately cover the issues related to sustainable use of biological resources. Nevertheless, the above indicates that Georgia is also progressing towards the implementation of 1EPR Recommendation 8.2 (concerning harmonization of biodiversity legislation).

The legal framework of Kazakhstan described in Chapter 9 of its 3EPR had not considerably changed, the majority of relevant laws (e.g., on environment, especially protected natural areas, fauna, forestry, land management and land use) was adopted prior to 2EPR, except for the 2017 Law on Pastures, which provisions could enhance the natural regeneration of natural ecosystems degraded by overgrazing (by making the pasture rotation scheme obligatory in pasture management plans).

Kazakhstan’s 3EPR noted that in 2017, Kazakhstan supplemented the 2006 Law on Specially Protected Natural Areas by adding the new Chapter 9-1 on biosphere reserves. However, it emphasized that Article 53-2 stipulated the protective regimes for all BR zones of a BR, which was not fully in line with the overall contemporary concept of BR functions set by the UNESCO Man and Biosphere (MAB) Programme aiming to reconcile biodiversity conservation in the BR core and buffer zones with sustainable development and use of natural resources in its surrounding transition area, not required to have a legal protective status. Kazakhstan further supplemented the above 2006 Law in 2017 by adding a new article on the key ornithological areas (IBAs), with the aim to protect habitats of larger populations of birds, rare and endangered bird species, characteristics of certain types of landscape and areas important for nesting and migratory bird species (including waterfowl), which is definitely a good practice example for the other countries.

However, Kazakhstan’s 3EPR also reported on other amendments adopted in 2008–2017 to the above 2006 Law, which worsened the situation of PAs, lowered their protective status, and caused internal contradictions, e.g., in Article 23, concerning the withdrawal of land from PAs or its long-term lease for commercial purposes (e.g., for the construction of tourist infrastructure), with possible adverse effects on PA integrity. A similar contradiction was noticed in the 2003 Land Code.

Moreover, a serious deficiency in the legal framework was indicated, as the protection of plant species was not yet regulated (which resulted in addressing 3EPR Recommendation 9.1, concerning enacting the legislation to conserve, protect and sustainably use the flora, including native wild species of flora and plant communities, with an emphasis on rare, endangered and endemic species).

However, in the course of the voluntary self-assessment carried out in 2020, Kazakhstan stated that the draft Law “On the Plant World” was prepared, approved, and was to be submitted for the adoption by the Parliament (Mazhilis) by December 2020. Thus, the full implementation of the 3EPR Recommendation 9.1 can be verified under the fourth EPR cycle.

As for the Republic of Moldova, 3EPR Chapter 1 (on policymaking framework for environmental protection and sustainable development) stated that “The 2007 Law No. 94-XVI on the National Environmental
Network (NEN) creates the legal framework for the establishment, development, management and protection of the network, as part of the Pan-European Ecological Network and of local ecological networks”.

3EPR Chapter 9 explicitly focused on the progress made since 2EPR, by mentioning the 2005 Law on the Red Data Book of the Republic of Moldova (regulating also the protection, restoration and use of red-listed species) and the 2007 Law on the National Environmental Network (aimed at linking existing and potential PAs, also expected to facilitate the transposition of both relevant EU Directives, in the context of the Association Agreement with the EU) as well as 2008 amendment of the Law on Fauna (of 1995, according to 3EPR Annex IV listing the environment-related legislation) concerning fauna species protection and monitoring.

Furthermore, Chapter 9 mentioned the draft law on PAs (reported to address some shortcomings of the legislation in force at the time of the 3EPR, in particular the management of PAs other than scientific reserves, and harmonization of the national PA categorization system with IUCN categories), as well as planned (either pending, or only discussed) adoption of a special law on landscapes, amendment of the Law on Nature Protection (? neither mentioned in 3EPR Chapter 1, nor listed in Annex IV), the thorough update of the Forest Code, or “the GD to establish Orhei National Park” (however, a “GD” meaning Government Decision is not yet decisive for the new PA designation, which requires the adoption of a special separate law, similar to e.g., the Law no. 132/2018 on the creation of the “Prutul de Jos” Biosphere Reserve).

It should be noted that Chapter 9 did not explain the relations or differences between this draft law on PAs (awaiting adoption) and the (probably existing if awaiting amendment) Law on Nature Protection, which could include e.g., provisions concerning the protection and sustainable use of species other than red-listed ones or hunting and fishing. Similarly, no information is provided on the current legal basis and regulations concerning the designation and functioning of PAs (prior to the planned adoption of the above draft law). Similarly, if a separate 1995 Law on Fauna was amended, a separate Law on Flora could possibly also exist and be in force. However, this quite short 3EPR Chapter 9 sub-section did not further elaborate on the biodiversity-related legislation in the Republic of Moldova.

Due to the above, 3EPR addressed Recommendation 9.2: to accelerate the preparation of the new law on PAs, also in order to harmonize the national PA categories with those of the IUCN, and Recommendation 9.4 (b): to finalize the preparation of the draft law on landscapes.

According to the 2020 self-assessment, the draft law on PAs (following the IUCN categorization) was prepared under the project supported by the UNDP and became a subject of several workshops and public discussion but has not yet been adopted. Hence, the state of implementation of Recommendation 9.2 can currently be assessed as “ongoing / in progress”.

According to the 2020 self-assessment, the draft law on landscapes was not accepted by the Reglementary Impact Assessment Working Group (RIA). Due to the above, the provisions on landscape protection were included in the draft Code on Urbanism and Construction, approved by GD no. 707/2016 (OG No. 156/2016). However, the above draft Code was examined by the Parliament in the first reading only, and later returned back to the Government. Most recently, a draft law on amending the Law no. 835/1996 on the principles of urbanism and spatial planning was in preparation, expected to include the provisions of the European Landscape Convention.

Hence, the implementation of Recommendation 9.4 (b) can only be assessed as ‘partial’, as most probably a separate law on landscapes will not be adopted, while the ELC provisions287 are quite general, to say the least (basically limited to requirements concerning the establishment and implementation of relevant

287 www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680080621
landscape policies, identification and assessment of landscapes, defining landscape quality objectives, and introducing instruments aimed at protecting, managing and/or planning the landscape).


Chapter 11 indicated numerous shortcomings of this comprehensive legal framework, which included e.g., the lack of clear criteria for PA designation, and missing obligation for the development and implementation of PA management plans (furthermore, even if such were adopted, there was no legal requirement for their integration with the land use plans required by the revised 2002 Law on Land). Other major gaps were that the legal powers to ‘declassify’ a PA were not delegated to any particular authority, and that launching the official procedure for PA designation did not prevent the issuance of exploration or mining licences concerning these areas. The revision of laws on PAs and their buffer zones commenced already in 2006 but had not been completed prior to the EPR (conducted in 2017).

On the other hand, Chapter 11 indicated several ‘best practice examples’, e.g., regulations of the 1995 Law on Natural Flora providing for the effective protection of flora species outside officially designated PAs (for details see sub-section 1.1.1), and of the 1997 Law on Buffer Zones of Special Protected Areas, including clear criteria for the designation of such zones (missing for PAs in the 1994 Law on Special Protected Areas), as well as the due consideration of the range, migration routes, and even the potential distribution range of rare and threatened fauna species (thus, not focusing solely on the current habitats and refuges of these species). Moreover, the 1997 Law enhanced the participation of local stakeholders in the management of buffer zones (also in the development and implementation of a “buffer zone management plan”) and required carrying out a detailed EIA for numerous commercial activities to be conducted in the buffer zone (however, excluding potentially harmful tourist infrastructure and residential housing development).

Although Mongolia did not mention any results of its self-assessment of the rate of implementation of EPR recommendations in 2020, according to its 6CBD NR dated 2019, a draft revision of the 1994 Law on Special Protected Areas was prepared, consulted with stakeholders and pursuant to 3EPR Recommendation 11.6 (a), finalized and submitted to the Ministry of Justice and Home Affairs in November 2018 (6CBD NR). The revised draft law included provisions resulting from the recent international best experiences, trends, and approaches (e.g., providing a legal protective status to ecological corridors linking PAs). However, the above Ministry returned the draft law for further refining by the working group. The progress in the revision, adoption, and enforcement of the Law on Special Protected Areas should therefore be assessed under the fourth EPR cycle.

The 6CBD NR of Mongolia noted that “The Law on Forests was amended spelling out rights and responsibilities of forest user groups”. However, no date of such amendment was stated, and no more details were provided, thus the state of implementation of 3EPR Recommendation 13.3 (a) concerning the formalization of the legal status of such forest user groups and their rights remains unclear and should therefore be assessed under the fourth EPR cycle.

The 3EPR of Montenegro did not contain a separate chapter on biodiversity and PAs, but its Chapter (on legal and policymaking framework and its practical implementation) noted that the 2008 Law on Nature Protection (OG 51/08, 21/09, 40/11, 62/13, 6/14) was amended several times to align the nature protection system with obligations resulting from Montenegro’s international commitments and relevant EU directives. The 2009 Law on National Parks (OG 56/09, 40/11) provided for the establishment of the Public
Enterprise “National Parks of Montenegro” (PENP), made responsible for the management of national parks. However, Chapter 1 also mentioned the new Law on National Parks (OG 28/14) adopted in July 2014 (thus, most probably replacing the 2009 Law).

The 2020 voluntary self-assessment on the implementation of the 3EPR recommendations indicated the Law on Nature Protection (OG MNE No. 54/16) currently in force in Montenegro.

Chapter 9 of the EPR of Morocco elaborated on the most relevant 2003 Law on the Protection and Conservation of the Environment (which contained also detailed provisions on biodiversity conservation and protection of flora and fauna species), the 2010 Law on Protected Areas (where Chapter 9 explained the difference between the national PA categorization system and the IUCN categories), and the 2011 Law on the Protection of Wild Fauna and Flora and Control of their Trade (enforcing CITES). The EPR report contained 3 recommendations concerning suggested improvements of the biodiversity-related legal framework, namely the finalization, adoption, and implementation of the Law on the Development, Protection, Enhancement and Preservation of the Coastline (Recommendation 1.4), drafting the new legislation on environmental monitoring (incl. biodiversity), assessment and reporting (Recommendation 3.1), and the preparation for adoption of new legislation to protect sensitive oasis and mountain areas (Recommendation 9.5).

According to the draft (currently ongoing) second EPR of Morocco, the legal acts concerning the protection of oasis and mountain ecosystems are still missing, but the Coastal Law (No. 81-12) was adopted in 2015, and the resulting National Integrated Coastal Management Plan was adopted in February 2020. Hence, EPR Recommendation 1.4 has been implemented from the legislative point of view, but the progress in the implementation of the above Plan should now be monitored and possibly assessed under the 5th cycle EPR of Morocco.

According to Chapter 11 of the 3EPR of North Macedonia, most of its biodiversity-related laws (e.g., on nature protection, environment, forests, agriculture, agricultural land, pastures, hunting, fishery and aquaculture) had been adopted before the 2EPR, except for the 2012 Law on Tourism Development Zones, 2012 Law on Mineral Resources, 2014 Law on Spatial and Urban Planning, and 2014 Law on Mountain Trails.

The most relevant was the 2004 Law on Nature Protection, which not only defined the national categories of PAs, indicated their possible functional zoning pattern, and determined the legal protective regime, but also contained provisions on the establishment of the national ecological network (incl. ecological corridors), provided a legal basis for mutual agreements on harmonized management plans for transboundary PAs, and the protection of landscape diversity, valuation of landscapes and monitoring of their state, with a view to their possible proclamation as PAs. Furthermore, this Law regulated the proclamation, protection and management of “natural rarities”, i.e., rare, endangered and endemic species, plant communities, relief forms, or speleological objects, which were not a separate PA category. However, the full implementation of the 2004 Law required the adoption of some 50 by-laws, while only 17 were successfully adopted in North Macedonia (according to its 2018 NBSAP).

The above 2004 Law (amended some 17 times since 2011, also due to its expected approximation with the EU legislation) was to be replaced by a new law concerning the protection of nature (drafted at the time of the 3EPR). For this reason Chapter 11 pointed out several shortcomings of this 2004 Law, which could possibly be eliminated in the new law (expected to be adopted in 2019), e.g., concerning the non-precise and insufficient regulations on granting temporary protection for species being evaluated for their proclamation as strictly protected or protected, and for areas proposed for protection that were subject to procedures of valorization and proclamation as PAs, as well as misleading formulations concerning the duration of such ‘temporary’ protection. Chapter 11 also indicated that the timeframe (defined in the above 2004 Law) for the procedure of “re-proclamation” of all PAs designated before 2005 expired already in 2010, but such procedures had not been completed by 2018. The above delay halted the development and adoption of long-term management plans for all PAs not yet re-proclaimed.
The progress in the adoption and implementation of the new law concerning nature protection in North Macedonia should therefore possibly be assessed under the fourth EPR cycle. Particular attention should be paid to the issues related to the protection of landscape diversity, with a view to share such experiences with the other EPR countries, most of which not yet have similar regulations (developed by Belarus as a separate legal act, previously also by the Republic of Moldova).

The draft 3EPR of Romania noted (in Chapter 1 on the legal, policy and institutional framework) the complicated structure of its legal framework, including ‘organic laws’ adopted by the Parliament by qualified majority and ‘ordinary laws’ by simple majority, as well as Government decisions (GDs) considered implementing acts, Government regular ordinances that can be issued during parliamentary recesses, and Government emergency ordinances (GEOs) to be issued only in emergency situations.

Chapter 1 reported on the common overuse of the above GEOs, which can amend ordinary laws and be passed without public consultations (hence, in contradiction with the principles of the Aarhus Convention), thus affecting the quality and stability of legislation, which can therefore later be contested in front of the Constitutional Court. An example of such unstable legal act which regulates nature protection could be the GEO No. 57/2007 on the Regime of Protected Natural Areas, Conservation of Natural Habitats, Wild Flora and Fauna, which was amended 22 times since its adoption (incl. 18 times since 2012, when the 2EPR was conducted). Hence, although neither indicated in 3EPR Chapter 11 (on biodiversity and PAs) nor Chapter 1 (on legal, policy and institutional framework), the Law No. 49/2011 approving the above GEO No. 57/2007 must have been amended through the later amendments of this GEO.

The Law No. 95/2016 established the National Agency for Natural Protected Areas (NANPA), but its competencies are regulated by an ‘emergency ordinance’ (GEO No. 75/2018), which excluded the need for consultations with the public and interested relevant stakeholders prior to GEO adoption.

The 3EPR of Serbia (which did not contain a separate chapter on biodiversity and PAs) noted in Chapter 1 (on legal and policymaking framework and its practical implementation) the 2009 Law on Nature Protection (OG 36/09, 88/10, 91/10), which defined categories of protected natural goods (PAs, strictly protected and protected species, and ‘mobile protected natural documents’, e.g., botanical and zoological collections) and their protective regimes, categorized PAs accordingly to the level of their significance (PAs of international or national, i.e. exceptional significance, of regional i.e. high, significance, and of local significance), and determined their designation procedures.

Moreover, the above 2009 Law required the development of nature status reports every five years at the national, provincial and local levels (the first national status report for the period 2010–2014 was expected to be issued in 2015), which can be a good practice example, worth sharing with the other EPR countries.

Another important relevant act in Serbia was a separate Regulation on the ecological network (OG 102/10) concerning the protection, management and funding of the ecological network of ecologically important areas and ecological corridors of national and international importance, incl. Emerald and Natura 2000 sites.

3EPR noted that a draft law on amendments to the 2009 Law on Nature Protection, concerning e.g., the ecological network and the protection of wild species was under preparation. Hence, the progress in the adoption and implementation of the new law should possibly be assessed under the fourth EPR cycle.

Another best practice example was indicated in the 2019 6CBD NR, which noted that, according to the national legislation, all sites with finalized studies concerning their protection, even if not yet formally designated, were considered in Serbia as PAs.

In Tajikistan most of biodiversity-related laws in force at the time of its 3EPR were adopted around or shortly after its 2EPR (conducted in 2010/2011), namely the 2011 Law on Environmental Protection, 2011 Law

3EPR Chapter 8 briefly described the above, but also focused on indicating numerous inconsistencies, contradictions and shortcomings of the biodiversity-related legislation, and reported that some of the recently adopted laws worsened the conditions for effective biodiversity conservation. Furthermore, it was noted that almost all recently adopted laws avoided regulating different issues in more details, instead referring to indefinite other laws ("in accordance with the legislation"), while corresponding by-laws were usually adopted much later.

A particularly striking example of law contradictions was noticed between the provisions of the 2008 Law on Fauna and the 2011 Law on Environmental Protection (which explicitly prohibited hunting on animal species listed in the Red Book) and the 2014 Law on Hunting and the Hunting Sector, which legitimized hunting on these fauna species, red-listed and threatened by extinction in Tajikistan.

Furthermore, Chapter 8 emphasized that the 2011 Law on Specially Protected Natural Areas did not provide for the stability of the PA legal protective status, which could expire, be suspended or withdrawn, also ad hoc, if “an urgent public need arises”. Such shortcomings were particularly threatening the continuity of existence of 13 nature preserves (in case of Tajikistan usually extensive and relatively well-preserved natural areas).

Due to the above, 3EPR addressed Recommendation 8.4, suggesting the Government of Tajikistan to amend the 2011 Law on Specially Protected Natural Areas so as to grant permanent legal protective status to all PAs.

Tajikistan did not inform on its 2020 self-assessment of the implementation of the 3EPR recommendations of 2017, but in its 6CBD NR stated that “Based on the values of the existing biodiversity in the protected areas, the Government of the Republic of Tajikistan extended the period of operation of all 13 natural reserves for the next 10 years”. Should this extension be made recently, it would imply that the 2011 Law on Specially Protected Areas was not amended, and Recommendation 8.4 not implemented. However, the above statement can also consider the period before the 3EPR of Tajikistan was conducted, thus the status of implementation remains unclear.

In Uzbekistan several new biodiversity-related laws had been adopted within its 3EPR reporting period, including the 2016 revised editions of the 1997 Law on the Protection and Use of Flora and the 1997 Law on the Protection and Use of Fauna, both quite comprehensive and defining a more detailed division of duties, rights and responsibilities between the central state administration and local government bodies (however, none of these Laws determined methods and procedures for the monitoring of flora and fauna species). Furthermore, the 2018 revised edition of the 1999 Law on Forests (which practically prohibited timber harvesting in areas other than commercial plantations, except for the thinning of forests and sanitary cuttings), both potentially mitigating further damages to grassland and forest ecosystems, and the 2019 Law on Pastures which defined measures which could largely enhance the natural regeneration of natural ecosystems degraded by overgrazing, including the obligatory seasonal pasture rotation, as well as other rules, norms and standards (incl. the maximum permissible load on the pasture, determined on the basis of the inventory of pastures and their geobotanical survey).

3EPR Chapter 11 pointed out deficiencies, inconsistencies and contradictions of the legislation adopted well prior to 2EPR (but still in force, not yet revised), e.g., gaps in the 1992 Law on Nature Protection concerning biodiversity monitoring and differentiation between passive conservation and active nature protection, then gaps in the 2004 Law on Protected Natural Territories concerning e.g., the non-regulated procedures for the designation, “reorganization” (change in protective category) and termination (degazetting) of PAs, the missing division of duties, rights and responsibilities for PA management (between
the central government, local government bodies and “specially authorized state bodies”, the last not even defined). Other inconsistencies of the above 2004 Law concerned e.g., the PA designation for areas with functions contradictory to biodiversity conservation objectives (hunting farms) or areas only planned for the future management of a still-absent particular natural resource (open areas potentially suitable for afforestation). Another gap was the absence of the concepts of the ecological network and ecological corridors (despite that adequately regulated and successfully implemented in neighbouring Kazakhstan).

3EPR addressed Recommendation 11.3 (a), suggesting adopting amendments to the 2004 Law on Protected Natural Territories, allowing the incorporation of the ecological network and ecological corridors concepts.

In 2020, in the course of the self-assessment of the implementation of the 3EPR recommendations, Uzbekistan noted that the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated 04.05.2018 No. 339 contained references to the ecological network, and that the revision of the Law “On Protected Natural Areas” was planned for 2021. Hence, the progress in the adoption and implementation of the above revised Law should possibly be assessed under the fourth EPR cycle.

Resulting recommendation for the fourth EPR cycle:

Each EPR should strive to assess whether:

- the legal framework of a reviewed country is complete (whether all important aspects are duly covered)
- the legal framework is coherent, and contains no internal shortcomings and discrepancies
- the legal framework of a reviewed country conforms with the accepted international commitments and obligations, in particular those deriving from the globally adopted MEAs
- the laws are either comprehensive, or accompanied by resulting by-laws
- the laws establish basis for the development and adoption of resulting policies and strategies
- the laws provide basis for the establishment and effective operation of the related institutional framework
- the laws provide for clear division of responsibilities and competencies of different public authorities and state agencies assigned tasks related to the enforcement of biodiversity conservation and PA management
- the laws enhance the horizontal coordination between different relevant sectors, as well as authorities and agencies within the same sector (in particular those supervised by the same Ministry)
- the legislation is effectively enforced on the ground (both inside and outside PAs).

1.6.2. Policy framework

Methodological remarks

Again, due to the logical structure of EPR reports, always beginning from Chapter 1 on legal, policy and institutional framework, repetitions and overlaps between the above chapter and this sub-section of the chapter on biodiversity and PAs can hardly be avoided.

Pursuant to the EPR “Explanatory note on drafting process”, experts should avoid listing numerous policy documents, instead they are expected to “describe and clarify the relationships among the various policies, strategies and laws, and assess their effectiveness”.

In fact, as the overall EPR process is aimed at the assessment of the country performance, most important would be the last of the above-mentioned tasks: to evaluate the effectiveness of country response, i.e. the implementation (pursuant to the full title of this sub-section) of relevant strategies, programmes and action plans, which could possibly result in recommending necessary adjustments and modifications, so as to allow a better performance and more effective response in the future.
It should also be emphasized, that the adoption of such a policy document does not yet mean its successful implementation ‘on the ground / in the field’. Policy documents are not legally binding by definition, while numerous circumstances (e.g., the lack of available funding, or the pandemic situation) can be used as an excuse and justification for the postponement or abandonment of implementation of some previously planned activities.

Last, but not least, a policy document which is not implemented can be perceived as purely ‘declarative country response’, adopted solely for the purpose to keep up with the other countries, fulfil the international commitments resulting from ratified MEAs, and demonstrate the concern for e.g., nature conservation to satisfy the voting part of the society, local and international environmental NGOs, and foreign donors. As formulated by the former Governor of the State of California “The reason that everybody likes planning is that nobody has to do anything”.

Due to the above, whenever possible, each EPR should try to assess not only the presence of the ‘declarative country response’, but also the progress of the implementation of ambitious plans, strategies, and other policy instruments, thus the effectiveness of the ‘active country response’.

However, it should be noted that the vast majority of relevant national strategies, programmes and action plans adopted in 3EPR countries is almost never translated from national languages into English or Russian (except for the NBSAP, obligatory for the Parties to the CBD).

As a result, EPR experts can rarely verify the contents and check detailed provisions of these national policy documents, much less evaluate their effective implementation. Also due to the fact, that the progress in the implementation and effectiveness of these national strategies, programmes, and action plans is quite often not evaluated (e.g., on mid-term basis) by the countries themselves, so that EPR experts cannot access such evaluations, mid-term and progress reports (again, except for NBSAPs, as the CBD Parties are obliged to submit periodic National Reports to the CBD Secretariat).

An interesting positive example is Montenegro, where, according to the information resulting from the voluntary self-assessment on the implementation of the 3EPR recommendations carried out in 2020, Article 12 of the Law on Nature Protection (OG MNE No. 54/16) obliges to report on the implementation of the National Biodiversity Strategy on a biennial basis, based on monitoring the implementation of the resulting Action Plan. Biennial reports on the implementation of the NBSAP for 2016–2020 are prepared by the Agency for Nature and Environmental Protection, later considered and adopted by the Government. The above Law requires to report on measures undertaken, analyze the progress in the implementation on the basis of performance indicators, and to consider possible modifications and improvements, towards the effective implementation of the Action Plan. In May 2018 the Government of Montenegro adopted the 6th biennial Report on the implementation of the NBSAP, for the reporting period January 2016 – December 2017. The next report (concerning the period May 2018 – May 2020) was in the final draft stage. However, these biennial reports are probably available solely in the Montenegrin language version, so that the EPR experts would have to rely on automated translations.

The above requirement for the systematic and regular monitoring of the progress, allowing for frequent adjustments of the national strategy implementation mode and pace in Montenegro is obviously a best practice example, worth recommending to other 3EPR countries.

It should also be noted that the national policy documents can sometimes largely overlap in substantive terms but contain different measures or indicate different timeframe for implementation, which does not facilitate the proper assessment. An example identified in the course of the 3EPR was North Macedonia, where the 2018 National Strategy for Nature Protection for the period 2017–2027 accompanied by the corresponding Action Plan, and the 2018 NBSAP for the period 2018–2023 were not harmonized, although adopted in the same year.
Furthermore, the absence of operational biodiversity monitoring resulting in the lack of data can seriously hamper or prevent the evaluation of the effectiveness of implemented national strategies, programmes, and action plans.

Simultaneously, the lack of credible data resulting from regular biodiversity monitoring (or regularly updated national forest inventories) is always a serious obstacle for sound information-based policy formulation and prioritization of strategic targets.

To summarize, effective implementation is key, but the presence of officially adopted strategies or habitat and species conservation programs prioritizing needs and detailing tasks is the indispensable basis. The lack of a policy document clearly indicates the lack of political will and commitment.

Coverage of policy framework subject in 3EPR reports

All 3EPR listed a multitude of policy documents, relevant to biodiversity and PAs, and further elaborated on their thematic scope, goals, strategic objectives, targets, expected outputs etc., sometimes also mentioning the related achievement indicators. However, most probably such ‘declarative country response’ has not always been followed by tangible activities and achievements resulting from the factual implementation of these documents.

The effectiveness of ‘country response’ and the progress in the implementation of relevant selected national strategies, programmes and action plans was sometimes assessed (in chapters concerning policy framework and/or biodiversity) in 3EPRs of Belarus, Mongolia, Montenegro, Morocco, North Macedonia, Romania, Tajikistan, and Uzbekistan, whenever EPR experts could either access relevant documentation, or formulate conclusions based on their own observations and assessment.

The above confirms the general observation that the progress in the implementation and effectiveness of adopted national strategies, programmes, and action plans is often neither monitored nor evaluated by the countries themselves, which should be an indispensable first step preceding the elaboration of subsequent new policy documents concerning the same challenge.

3EPR country performance – policy framework

The table below presents the availability of the selected policy documents in 3EPR countries, as of 2020.

<table>
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<tr>
<th>3EPR country</th>
<th>CBD NBSAP</th>
<th>National wetland policy</th>
<th>National Action Plan PoWPA</th>
<th>doc. on extension of nat. PA network</th>
<th>National species conservation APs</th>
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National Biodiversity Strategy and Action Plans
It should be noted that the validity period of the vast majority of the most recent NBSAPs expired in 2020 (in case of Serbia already in 2018), thus in parallel with the expiration of the planning horizon of the CBD Strategic Plan for Biodiversity 2011–2020 (in case of Serbia already in 2018, while the validity period of NBSAP of North Macedonia will expire in 2023). Currently the elaboration of subsequent NBSAPs is delayed, due to the postponement of CBD COP15, resulting in the absence of the officially adopted CBD Post-2020 GBF. Nevertheless, in the coming years, all 3EPR countries would have to evaluate the results of the implementation of their previous NBSAPs, as well as prepare, adopt and implement new NBSAPs, modified accordingly to the current global challenges and priorities, and CBD COP15 outcomes.

NBSAP (explicitly required by Article 6\textsuperscript{288} of the CBD) were still missing in three 3EPR countries (Bulgaria, Kazakhstan, and Uzbekistan), both during their 3EPRs, and as of 2020.

In 2020 in the course of the self-assessment of the rate of implementation of the 3EPR Recommendation 9.1, Bulgaria noted that the drafting of the new NBSAP was in progress (commissioned to private contractor), and that the original timeframe for its adoption was the first quarter of 2021, later postponed tentatively for the third quarter of 2021 due to the COVID-19 pandemic and associated lag in the process of preparation of the CBD Post 2020 biodiversity framework.

According to the 2020 self-assessment by Kazakhstan, concerning implementation of the 3EPR Recommendation 9.3, the Concept for the conservation and sustainable use of biodiversity in the Republic of Kazakhstan until 2030 has been developed. However, this document has been mentioned in 3EPR (as developed already in 2015, and not formally endorsed by the Government), which was the original reason for addressing Recommendation 9.3 (a). No information on the possible formal adoption of the above Concept was available.

In Uzbekistan the “Strategy for preserving biological diversity in the Republic of Uzbekistan for 2019–2028”, and the corresponding action plan on strategy implementation was adopted by the Resolution of the Cabinet of Ministers of 11 June 2019 (No. 484). However, these policy documents have not yet officially been submitted to the CBD (besides, their planning horizon is clearly non-harmonized with the CBD strategic planning timeframe). Furthermore, as emphasized in 3EPR, this set of 2 documents was incoherent, as its two components (Strategy and Action Plan) were not fully harmonized. As a result, not all national priorities and objectives defined in the Strategy were reflected in the Action Plan.

Policy documents concerning wetlands conservation

As for the national wetlands policies and/or national programmes for wetlands conservation, despite the fact that these are required under the Ramsar Convention Strategic Plans, only three 3EPR countries (Belarus, Bulgaria, and Morocco) had them in place.

It should be noted that although wetland conservation issues are often included in NBSAPs, the Ramsar Convention documents explicitly indicate the need for a separate document (National Wetland Policy or equivalent instruments fully in place alongside and integrated with other strategic and planning processes by all Parties).\textsuperscript{289}

Policy documents concerning extension of the national PA networks

The extension of ecological networks by the designation of new PAs of national protective categories is usually planned in NBSAPs. Furthermore, several 3EPR countries planned the nomination of candidate sites for the Emerald Network, or the identification of potential Natura 2000 sites.

\textsuperscript{288} \url{www.cbd.int/convention/articles/?a=cbd-06}

However, some 3EPR countries officially adopted policy documents concerning the designation of new PAs, as follows:

- **Belarus** (the 2014 National Strategy for Development of the System of Specially Protected Natural Areas until 1 January 2030, and the 2014 Scheme for the rational location of republican specially protected natural areas until 1 January 2025)
- **Kazakhstan** (the 2017 General Scheme for the organization of the Territory of the Republic of Kazakhstan)
- the **Republic of Moldova** (the National Programme on the Environmental Network for 2011–2018)
- **Mongolia** (the 2015 National Biodiversity Programme for the period 2015–2025)
- **North Macedonia** (the 2004 Spatial Plan)
- **Montenegro** (the Spatial Plan of Montenegro until 2020)
- **Serbia** (the 2010 Spatial Plan for the period 2010–2020)
- **Uzbekistan** (the 2019 Roadmap for the development of the PA system for the period 2019–2022, and the Program for the creation and expansion of the system of protected natural areas in the Republic of Uzbekistan until 2028)

Moreover, the designation of new PAs in **Bosnia and Herzegovina** can possibly be inscribed into the 2015 Spatial Plan of RS until 2025, and the Spatial Plan of the FBiH until 2028. However, the latter has not yet officially been adopted, according to the information by Bosnia and Herzegovina, received as a result of its 2020 self-assessment “the Spatial Plan of Federation of BiH, which integrates the values of biological diversity” was still in the Parliament procedure in 2020.

### National species conservation action plans and programmes

The national species conservation action plans and programmes were, as of 2020, most probably still missing in three 3EPR countries (Bosnia and Herzegovina, Montenegro, and Tajikistan).

### Newly adopted policy documents

According to the information provided in late 2020, as a result of the voluntary self-assessment conducted by some 3EPR countries, several new policy documents were recently adopted:

- in December 2019 **Albania** approved the new strategy on forests (information on its contents was not provided);
- in 2017 **Bosnia and Herzegovina** adopted the “Strategic Plan for Rural Development of BiH 2018–2021 - Framework Document”; in 2019 works on the development of the Environmental Strategies to be adopted at the central, federal and entity levels (for Bosnia and Herzegovina, the FBiH, RS, and for BD) commenced, including biodiversity and nature protection issues;
- in **Bulgaria** the Ministry of Environment and Water conducted the process of elaboration and approval of the National Prioritized Action Framework for Natura 2000 (NPAF) for the EU Multiannual Financing Period 2021–2027, including a number of measures for enhancing management of protected sites (e.g., the “establishment of national and regional structures for the management of Natura 2000 zones, including the effective measures for improvement of their administrative, financial and communication capacity”) as well as land acquisition and compensation schemes for the restoration and improvement of conservation status of specific steppe habitats in grassland ecosystems;
- in **Georgia** the National Forest Management Action Plan was integrated into the National Environmental Action Plan (2017–2021) and Rural Development strategy and Action Plan (2021–2027);

According to the draft (4th cycle) EPR, in 2017 **Morocco** launched the implementation of the National Wetlands Strategy 2015–2024 and resulting Action Plan. In February 2020 Morocco adopted the National Integrated Coastal Management Plan (for more details see sub-section 1.1.2 on ecosystems).
Moreover, according to 2020 VNR by Uzbekistan, the Forestry Development Program 2020–2024 has recently been adopted, while 2021 information on Southern Ustyurt nature park (in the context of the planned World Heritage property “Cold winter deserts of Turan”, see sub-section 1.5) implies that the Program for the creation and expansion of the system of protected natural areas in the Republic of Uzbekistan until 2028 is already being implemented (thus, it had to be successfully adopted).

Resulting recommendations for the fourth EPR cycle:

Despite that EPR reports often list a multitude of formally adopted policy documents / strategies perceived relevant to biodiversity and PA issues (or at least mentioning these terms), it is recommended that EPR experts pay particular attention to the following policy documents:

- NBSAPs\(^{290}\) required under the CBD (e.g., CBD Aichi Biodiversity Target 17 stipulated that “by 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated NBSAP”), and therefore available online\(^ {291}\) for most of the EPR countries. The progress in the implementation of the above strategies and action plans is periodically reported to the CBD in National Reports, submitted either online\(^ {292}\) or offline.\(^ {293}\) Please note that recently the CBD website appeared in a new version (which unfortunately does not facilitate navigation through its contents, to say the least), and, as of early 2020, the websites of the CBD CHM were not yet fully harmonized, thus some other 6th CBD NRs were available from another CBD CHM database website;\(^ {294}\)
- national wetlands policies and/or national programmes for wetlands conservation (required under the Ramsar Convention Strategic Plans for 2009–2015 and 2016–2024, but currently missing in most 3EPR countries). Please note that triennial national reports on the implementation of the Ramsar Convention are available online;\(^ {295}\)
- national Action Plans\(^ {296}\) concerning PAs, officially submitted by several EPR countries under the CBD Programme of Work on Protected Areas;\(^ {297}\)
- national strategies concerning the further extension of the PA network (which implementation is relatively easy to assess, by e.g., verifying which of the originally planned PAs were actually designated);
- species and/or habitat conservation action plans and programmes, either national ones, or implemented in cooperation with the other countries, e.g., under the CMS, resulting numerous Memoranda of Understanding\(^ {298}\) (concerning e.g., the Siberian crane, Bukhara deer, saiga antelope) involving either all or most 3EPR countries, and Special Species Initiatives;\(^ {299}\) (relevant SSIs are the Central Asian Flyway\(^ {300}\) - CAF, CAMI, Sahelo-Saharan Megafauna, the last involving Morocco); in particular those where countries are expected to report on the progress in implementation.

The official adoption and effective implementation of subsequent NBSAP (expected to accommodate the long-expected CBD Post-2020 GBF) should duly be monitored under the fourth EPR cycles for all reviewed countries. However, the progress by Kazakhstan and Uzbekistan would be most interesting, considering...
that the above countries either already adopted (Uzbekistan) or drafted (Kazakhstan) similar policy documents with matching planning timeframe (until 2028 or 2030, respectively).

The effectiveness of implementation of national wetlands conservation policies in Belarus, Bulgaria, and Morocco, as well as the adoption of such policy documents (required under the Ramsar Convention) and their implementation by the other reviewed countries should be monitored under the 4th and next EPR cycles.

However, particularly important would be to assess the progress of implementation of the national policy documents concerning extension of the national PA networks, and habitats / species conservation action plans and programmes, as the tangible results of such can easily be measured and evaluated.

1.6.3. Institutional framework and coordination

Methodological remarks

The structure and institutional setup, division of responsibilities and competences, operationality and effectiveness of the institutional framework related to biodiversity protection are influenced by numerous factors, including the history of the country, traditions of governance and administration at the central, regional and local levels, the wealth of the country’s natural resources (or the lack thereof), the current state and use of biodiversity resources, the state of knowledge on biodiversity and human capacities of scientific research institutions, the availability of state budget resources (or the lack thereof), the level of ecological awareness of the society, as well as the current ‘game of interest and powers’ between different user and interest groups, and their representatives in political parties.

For example, institutions in charge for biodiversity conservation in a country which economy is largely based on the extraction of mineral resources or agriculture can be made subordinate to the central administrative body (ministry) responsible for e.g., mining, energy, or agriculture. On one hand, such setup could (mostly in theory) potentially be beneficial for biodiversity conservation, due to the closer relation with the sector ensuring high state revenues. However, on the other hand, the above could result in a much lower positioning of biodiversity conservation priorities on the political agenda than those related to the increased use of mineral resources, intensifying the economic use of agricultural areas or extending these at the cost of the last remaining parts of natural ecosystems.

Furthermore, the positioning of biodiversity conservation priorities on the political agenda has an immediate effect on the operationality and capacities of institutions in charge for biodiversity conservation. Such can either be well-focused, specialized, and adequately resourced (where available financial resources allow e.g., the involvement of competent and highly skilled personnel), thus indicating a true commitment of the Government to solve biodiversity-related problems. On the other hand, such administrative bodies and institutions could simply be “made formally responsible” although not given sufficient legal powers and not provided adequate operational capacities to fulfil their statutory objectives.

The effective law enforcement, and the implementation of state policies and strategies concerning the management of natural resources and biodiversity conservation requires ensuring adequate operational capacities (incl. trained, skilled and devoted personnel, sufficient infrastructure and necessary modern equipment, and stable funding) for both the central level officers and field services. Please see in subsection 2.1 that the number of EPR Recommendations concerning the required capacity building constantly increased with each EPR cycle, while those concerning the decreasing availability of state funding became particularly visible under 3EPR.

The ‘game of interest and powers’ between different user and interest groups can equally influence the biodiversity-related legislation and institutional setup. For example, the state forests administration can be made responsible for the management of PAs (either those encompassing forest ecosystems, or all PAs), or granted the legal mandate to manage forests and harvest timber inside legally designated PAs (which
would therefore limit the powers, land management rights, responsibilities, and revenues of the PA administrative body. Please see in sub-section 2.1 that EPR recommendations concerning the need to clarify the scope of responsibilities for PAs and improve the related institutional setup constituted the majority of recommendations addressed under the ‘institutional’ heading.

Like in case of the legal and policy frameworks, the institutional framework of the reviewed country is always described in Chapter 1 on legal, policy and institutional framework. As a result, repetitions and overlaps between the above chapter and this sub-section of the chapter on biodiversity and PAs can hardly be avoided.

3EPR country performance – institutional framework and coordination

In Albania the Ministry of Tourism and Environment (formed in 2017) was in charge for biodiversity conservation issues. In 2014, the former Environment and Forestry Agency was reorganized into the NEA, the main regulatory authority in the environmental sector and the main institution responsible for monitoring and reporting on the environment, with 12 regional branches (REAs). Although in 2015 the competences for the management of forests and pastures were transferred from the central level to municipalities (which resulted in the dissolution of the 12 regional forestry directorates), the Ministry retained the competencies for shaping the forestry policy. Albania’s 3EPR emphasized the improvement of the institutional framework for the development and management of PAs through the establishment of the NAPA in 2015, together with its 12 regional administrations for protected areas (RAPAs); due to the above PAs were no longer placed under the responsibility of forest management authorities. However, its 3EPR reported that, between 2014 and 2016, the number of NEA and REAs staff was decreasing. While their budgets had to be complemented with donor funding, RAPAs did not have any operational budgets and were expected to attract external funding on project basis. Moreover, RAPA rangers were poorly equipped, and had no legal powers of inspectors, thus could not prevent and control illegal activities in PAs. 3EPR Chapter 9 (on biodiversity, forestry and PAs) reported that “In some protected areas, the allocations of funds were so small that logging became the only source of revenue to cover the salaries of the protected area staff”, although 3EPR Chapter 1 (on legal, policy and institutional framework) stated that “Protected areas do not have their own staff”.

Albania’s 3EPR noted that both the NEA and NAPA were responsible for the monitoring of biodiversity, while it was unclear how resulting data were shared between these two institutions. As indicated in sub-section 1.3, according to the 2020 self-assessment by Albania, the related 3EPR Recommendation 9.1 was implemented (although no further detailed explanations followed).

Furthermore, in 2020 Albania noted that the new National Forest Agency was established in 2020, but no other information on e.g., the scope of its competencies were provided. Thus, the relations between this newly established Agency and the local municipalities (since 2015 responsible for forest management) can possibly be clarified under the fourth EPR cycle.

Responsibilities for biodiversity conservation in Belarus were entrusted to the Ministry of Natural Resources and Environmental Protection (MNREP), the Ministry of Forestry and its State Forest Protection Service (within the areas covered by the state forests), and the State Inspectorate on Fauna and Flora Protection under the President, while 5 state nature protection organizations subordinate to the Affairs Management Department of the President were managing 5 PAs (4 national parks and Berezinskyi Biosphere Reserve), while local authorities were responsible for the designation and management of specially protected natural areas of local importance. Scientific institutes of the National Academy of Sciences were important institutional partners (in particular for biodiversity monitoring).

2EPR Recommendation 1.1, concerning delegating the overall responsibility for controlling the use of natural resources to the Ministry of Natural Resources and Environmental Protection was not implemented, so that the overlap of control functions performed by both above Ministries and the Presidential administration was not eliminated, while the activities of the Affairs Management Department of the
President related to the use of natural resources remained non-transparent to both the MNREP and the general public.

The 3EPR of Bosnia and Herzegovina emphasized that “The complex political organization of the country is one of the main reasons for a lack of coordination and delivery among the institutions dealing with nature conservation in Bosnia and Herzegovina”. At the time of the 3EPR there was no institution dealing with the environment (incl. biodiversity conservation) at the state level, and the institutional setup differed between its entities. In the FBiH, the relevant ones were the Ministry of Environment and Tourism, the Ministry of Spatial Planning, and the Ministry of Agriculture, Water Management and Forestry, but no specialized agency or institute for nature protection was in place. In RS the main actors were the Ministry of Spatial Planning, Civil Engineering and Ecology, and the Ministry of Agriculture, Forestry and Water Management, supported by the only state expert institution dealing with nature conservation in the country, the Institute for the Protection of Cultural, Historical and Natural Heritage of RS (operating under the Ministry of Education of RS). In BD most relevant were two Departments: of Spatial Planning and Property Issues, and of Agriculture, Forestry and Water Management.

The 3EPR noted also that the lack of coordination between the regional and local levels affected the integrity of PAs, due to the fact that both existing and planned PAs were well reflected in cantonal spatial plans, but the development plans of municipalities did not always follow the cantonal spatial plans and in result the municipalities could approve construction in those areas.

Bosnia and Herzegovina’s 2EPR and 3EPR jointly addressed 7 coordination-related recommendations to Bosnia and Herzegovina, but the rate of their implementation is rather low (see sub-section 2.1). According to the 2020 self-assessment by Bosnia and Herzegovina, 3EPR Recommendation 11.2 (a) concerning the establishment of an institute on nature protection to deal with tasks related to biodiversity and PAs (pursuant to the 2013 Law on Nature Protection) has not yet been implemented.

The 3EPR of Bulgaria noted that the Ministry of Environment and Water performed a controlling and coordinating role in biodiversity conservation among the different stakeholders. It reported that the management of nationally designated PAs was shared between the two ministries. The Ministry of Environment and Water, the National Nature Protection Service Directorate, Regional Inspectorates on Environment and Water (RIEWs), and national park directorates were in charge for the management of reserves, national parks and managed reserves (all exclusively state-owned). Other PAs where all kinds of land ownership were allowed (nature parks, protected sites, and natural monuments) were managed by the state forestry enterprises subordinate to the Executive Forest Agency under the Ministry of Food and Agriculture, and local municipalities. However, the Ministry of Environment and Water and its RIEWs had the mandate to carry out control functions also in areas managed by e.g., the Executive Forest Agency. The involvement of local municipalities, environmental NGOs and other relevant stakeholders in the management of national parks and nature parks is possible through the establishment of advisory councils to their directorates. In 2010 the Institute of Biodiversity and Ecosystem Research was established at the Bulgarian Academy of Sciences.

3EPR chapter 9 (on biodiversity and national ecological network) explicitly stated that “Interministerial control and coordination mechanisms are in place” (which is the reason for the positive assessment of the state of implementation of 1EPR Recommendation 1 in sub-section 2.1), including e.g., the National Biodiversity Council, the Standing Interinstitutional Working Group on Biodiversity (est. in 2008), or the Working Group on IAS (est. in 2011), which could possibly be presented as the best practice examples worth sharing with the other EPR countries, despite that the influence of these bodies and their role in environmental policymaking was rather limited (as emphasized in 3EPR Chapter 1 on legal and policymaking framework and its practical implementation).

In Georgia the main environmental authority, responsible also for biodiversity conservation at the time of the 3EPR was the Ministry of Environment and Natural Resources Protection, which supervised the subordinate National Forest Agency, and the Agency of Protected Areas (the latter in charge for PA
management and biodiversity monitoring inside PAs, although generally lacking both human and financial resources).

However, 3EPR Chapter 1 (on environmental governance and financing) reported on frequent reorganizations, emergence and abolishment of different ministries and state agencies, and resulting shifts in their scope of responsibilities. Some overlaps in mandates and a lack of clear delineation between the responsibilities of various actors concerning e.g., spatial planning and biodiversity protection were noted. According to 3EPR, despite that the mechanisms for horizontal cooperation remained weak, interactions on specific issues requiring interagency cooperation improved.

Several reorganizations of the institutional framework was reported also under the 3EPR of Kazakhstan, where the Ministry of Environmental Protection was initially transformed into the Ministry of Environment and Water Resources in October 2013, that was abolished already in August 2014. Since then, the Ministry of Energy was the main governmental authority concerning environmental protection, while the Ministry of Agriculture became responsible for e.g., PA management, forestry, fishing and hunting, flora and fauna. These tasks were performed by the Committee on Forestry and Fauna under the Ministry of Agriculture (however, the responsibilities for flora were limited to the lands of the state forests and PAs), having 14 territorial branches (oblast territorial inspections of forestry and fauna), and a number of subordinate entities, including PA administrations, state forestry enterprises, and the Kazakh State Forestry Research Institute. Activities of the Committee were supported by scientific research institutes, e.g., the Institute of Geography LLC, the Institute of Zoology and the Institute of Botany and Phytointroduction (the latter two subordinate to the Ministry of Education and Science), and main ecological NGOs. Regional authorities also played an important role in biodiversity conservation, as the state forestry institutions managing over 77 per cent of the forest fund land were under the jurisdiction of oblast akimats (local executive authorities), which also had the legal mandate to designate and manage PAs of local significance and establish ecological corridors.

According to 3EPR, although the Committee on Forestry and Fauna coordinated its activities with several departments of the Ministry of Agriculture, the Department of Environmental Monitoring and Information of the Ministry of Energy, and a number of various state agencies subordinate to other sectoral ministries, the horizontal coordination at the central level was still insufficient, in particular concerning the formulation and implementation of sectoral strategic plans and programmes, also due to the absence of the valid NBSAP in Kazakhstan.

In the Republic of Moldova, the central authority for biodiversity-related issues was the Ministry of Environment, and its Department of Natural Resources and Biodiversity. However, due to the limited capacities of the above Ministry, the forestry Agency “Moldsilva” was the main actor, as the central administrative authority subordinated to the government, responsible for the development and implementation of the state policy on forestry and hunting, protection of forests and wildlife, and biodiversity conservation (which included PA management, as most PAs were located within the National Forest Lands). Agency “Moldsilva” had 25 subdivisions, including 16 forest and 4 hunting enterprises, 4 natural reserves, and the Forestry Research and Management Institute. An important support was provided by the Academy of Sciences.

According to 3EPR, the 2012 Action Plan for Implementing the CBD Programme of Work on Protected Areas emphasized the unclear division of tasks between the Ministry of Environment and the Agency “Moldsilva” for the management of scientific reserves and nature reserves. 3EPR emphasized the lack of cooperation between governmental institutions, weak collaboration between local public authorities and central environmental authorities, and weak coordination of scientific programmes. However, it also listed a number of collegial bodies which could enhance the coordination of activities, e.g., the General Scientific Council for Protected Areas, the Ramsar National Committee, or the Working Group on the implementation of the CMS.
As for Mongolia, the main central administrative body responsible for the environment and nature conservation was the Ministry of Environment and Tourism, which tasks included management of PAs, water and forest resources, hunting, biodiversity conservation and monitoring. However, the Ministry was generally understaffed, for example its Protected Areas Management Department had, as of 2017, seven staff members. This Department was directly responsible for the management of the entire PA system and supervised the activities of 33 regional protected area administrations (PAAs), each responsible for managing one or more state-protected PAs (strictly protected PAs and national parks) within their respective operational ranges, jointly employing 607 staff (including 337 field rangers). The above was largely insufficient, in result the size of a patrolling district assigned to one ranger was 40,000 ha in mountainous areas, 50,000 ha in high mountains, and as much as 200,000 ha in the Gobi Desert area. The regional and local authorities were made responsible for the management of not only the locally PAs, but also several categories of state-designated PAs (for which no state funding was allocated).

The horizontal coordination of activities concerning biodiversity conservation was largely facilitated by assigning in 2012 the status of a ‘core ministry’ to the ministry responsible for environmental issues (like assigned to ministries responsible for justice and internal affairs, finance, foreign affairs, defence, labour and welfare), which implies that its activities are cross-sectoral, and sectoral ministries shall duly implement the decisions taken and communicated by such a ‘core ministry’. Additionally, collegial bodies such as the National Ramsar Committee were established.

In Montenegro since 2011 the main governmental authority responsible for policymaking on environment and sustainable development was the Ministry of Sustainable Development and Tourism (which responsibilities include also spatial planning), while the implementation of environmental legislation was entrusted (already in 2008) to the Environmental Protection Agency (EPA). However, the conservation and management of forests as well as hunting were among the competences of the Ministry of Agriculture and Rural Development. The 5 national parks were managed by the Public Enterprise “National Parks of Montenegro” (PENP). Since the decentralisation in 2008 the local self-government authorities gained more powers, including the designation of regional parks, nature parks, nature monuments and landscapes of exceptional features, and the adoption of management plans for these PAs and the local biodiversity action plans. Local self-government authorities can also organize monitoring in their territory, although in general environmental issues were usually not a priority at local level and were often superseded by transport, tourism and infrastructure development projects.

3EPR reported on the establishment of the National Council for Sustainable Development in 2002 (since 2013 the National Council for Sustainable Development and Climate Change), as a cross-sectoral advisory body on issues of sustainable development, involving several sectoral ministries as well as representatives of local self-government units, 1 representative of academia, 3 of employers’ associations, 1 of trade unions, 2 of NGOs (one for sustainable development and one for climate change), and 2 independent experts (one for sustainable development and one for climate change). Moreover, in 2011 a Council for Cooperation of the Government with NGOs was established, involving 24 members: 12 representing public authorities and 12 from NGOs (incl. 1 from an environmental NGO). Nevertheless, 3EPR emphasized that no mechanism for systematic exchange of information was in place, and personal relations were key for cooperation between the local level and the Ministry of Sustainable Development and Tourism.

At the time of the 3EPR of Morocco, the main governmental authority responsible for the development, monitoring and implementation of biodiversity-relevant national strategies and action plans was the Ministry of Energy, Mines, Water and Environment (in particular its Department of Environment), while the High Commission for Water, Forestry and Desertification Control (reporting directly to the Chief of the Government) was also in charge for the development and implementation of government policy concerning the conservation and sustainable use of forest resources and pastures, hunting, fishing, nature reserves and parks. Numerous consultative bodies were in place, e.g., the National Council for the Environment, the National Forest Council, The National Committee on Biodiversity, including representatives of the above Ministry and High Commission, as well as several other sectoral ministries (responsible for e.g., foreign affairs and cooperation, agriculture, rural development and fisheries, tourism, the interior, cultural affairs,
and education), scientific institutes and NGOs was expected to facilitate the horizontal coordination of activities concerning biodiversity conservation.

The draft fourth EPR cycle of Morocco noted the establishment of the Ministry of Agriculture, Maritime Fisheries, Rural Development and Water and Forests (on the basis of the former High Commission for Water, Forestry and Desertification Control) responsible for the management of public forests and all PAs. The above implies that EPR Recommendation 1.1 (a) concerning the restoration of the status of the national environmental authority to that of a ministry was implemented.

However, the restructured Ministry of Energy, Mines and Environment (no longer responsible for water resources) retained some powers concerning biodiversity conservation, e.g., oversees the implementation of NBSAP, fulfilment of national commitments under CBD (Aichi Targets) and the management of the biodiversity information platform (as its structure includes the National Observatory for Environment and Sustainable Development, which prepares national reports on environment and sustainable development, and manages environmental databases, including information on biodiversity). Moreover, it is the Ministry of Energy, Mines and Environment to lead the new National Commission for Climate Change and Biological Diversity (that first met in December 2020).

Hence, the coordination between the two above Ministries would be crucial, while according to the draft second EPR of Morocco, coordination among the various sectoral ministries and departments on the national level as well as in relation with regional authorities remains insufficient.

In North Macedonia the Ministry of Environment and Physical Planning developed and implemented national policies on nature protection, protection of biological and landscape diversity, and protection of natural heritage, as well as conducted control and supervision over the enforcement of the 2004 Law on Nature Protection. The administrations of national parks functioned as separate self-funding public institutions (although largely dependent on revenues from e.g., timber harvesting, and external funding), supervised by the above Ministry, while some other PAs were managed by the local self-government units.

However, another important actor was the Ministry of Agriculture, Forestry and Water Economy, which competences included the development and implementation of other relevant policies, e.g., those concerning agricultural land management, rural development, forestry (incl. the management, protection and use of forests, re- and afforestation), hunting and fishing, and melioration (influencing wetland ecosystems). The Public Enterprise “Macedonian Forests” and the Public Enterprise “Macedonian Pastures” were subordinate to the latter Ministry.

In result, the areas covered by non-forest ecosystems, the state forests, and hunting grounds (the last mentioned in 1EPR Recommendation 10.1 a) remain beyond the powers of the ministry responsible for environment and biodiversity. 3EPR emphasized that although a multitude of institutions and organizations were involved in activities for biodiversity conservation and nature protection, concerted efforts to coordinate activities between the responsible ministry for environmental affairs and other sectors (e.g., forestry, agriculture, transport, energy and tourism) were lacking. According to the 2020 self-assessment concerning the state of implementation of the 3EPR Recommendation 11.5 (c), a national council for nature protection has not yet been established, although its designation was explicitly stipulated by the 2004 Law on Nature Protection.

The draft 3EPR of Romania emphasized frequent reorganizations of the ministry responsible for environment, in result its name (and related scope of competences and internal structure) changed 7 times since 2EPR, coupled with frequent personnel changes (which must had influenced its institutional memory). Since February 2020 the Ministry of Environment, Water and Forests is responsible for developing and implementing policies and strategies for biodiversity conservation, forest management and PAs. This Ministry supervises a number of legal entities, such as the National Environmental Protection Agency (NEPA) monitoring the implementation of environmental legislation, issuing permits, maintaining biodiversity databases and reporting on e.g., Natura 2000 related issues; the National Environmental
Guard (NEG) performing environmental inspection, the Administration of the Danube Delta Biosphere Reserve, and the National Forestry Guard, established to prevent illegal logging.

PAs of national categories and Natura 2000 sites are managed by the National Agency for Natural Protected Areas (NANPA), while the state-owned forests (some 48 per cent of forested area) and hunting grounds are managed by the state-owned self-financing enterprise National Forests Administration “Romsilva” (which also manages national and nature parks, on the basis of 10-year agreement with NANPA). Local self-governments have a mandate for the designation and management of PAs of local interest and would probably be involved in the emerging management structures for Natura 2000 sites.

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. In result, according to the draft 3EPR, such coordination is over-regulated, and prevents ad-hoc daily cooperation of public servants of different sectoral ministries and state agencies. The Ministry of Environment, Water and Forests leads numerous committees and councils, e.g., the National Commission on Climate Change, the National Hunting Council, the Technical Commission for Forestry, and the Inter-ministerial committee for coordinating the integration of the field of environmental protection in sectoral policies and strategies at national level.

Also, in Serbia its 3EPR noted frequent changes of the institutional framework, as the name and scope of competences of the ministry responsible for environment changed trice since the previous 2EPR. Since the reconstruction of the Government in 2014, the Ministry of Agriculture and Environmental Protection was the main relevant central authority, supervising e.g., the Serbian Environmental Protection Agency (SEPA) responsible for monitoring and maintaining the national information system on environment, the Water Directorate, and the Forest Administration. An important actor is the Institute for Nature Conservation of Serbia (established in 1948), which monitors the state of nature, gathers resulting data and provides such for the development of spatial plans and PA management plans, develops studies justifying the designation of new PAs, and provides professional supervision and assistance for the implementation of protective measures, and management of PAs. Public Enterprises “Srbijašume” (Serbian Forests) and “Vojvodinašume” (Vojvodina Forests) manage state-owned forests, and hunting grounds. 5 public enterprises manage the 5 national parks (including forests inside NPs), while other 94 PAs were managed by PE “Srbijašume”.

3EPR reported that, despite the Law on State Administration required cooperation (incl. the establishment of joint bodies for cross-sectoral activities) and information exchange between the governmental administration bodies, in practice only the inter-ministerial working groups tasked with drafting the new laws and regulations were set, while the effective horizontal and multi-stakeholder coordination was mainly possible due to good personal contacts between the civil servants of different sectoral authorities. Similarly, the Law on Local Self-Government provided a number of mechanisms which could enable vertical coordination, the practical implementation of such was inadequate, and vertical coordination functioned mostly through personal contacts rather than through well-established mechanisms. The 3EPR also noted that the 2011 Biodiversity Strategy for the period 2011–2018 provided for the establishment of an inter-ministerial biodiversity council and a national council for genetic resources, but such bodies did not exist.

The 3EPR of Tajikistan reported that the Committee on Environmental Protection under the Government (est. in 2008) was the central environmental authority responsible for the development and implementation of governmental policy concerning e.g., environmental protection, biological diversity, climate change, and control over the rational use of natural resources. The Committee initially supervised several specialized agencies, such as the State Institution for Forestry and Hunting, State Institution “Scientific-Research Institute for Forestry” and State Institution of Specially Protected Natural Areas. However, in late 2013 / early 2014 the competences of the Committee related to the management of forests, PAs, and hunting
were withdrawn, and transferred to the newly established Forestry Agency, while the Environmental Police was removed from the structure of the Committee and included into the Ministry of Interior.

Hence, since 2014 the functions performed by the Committee on Environmental Protection were mostly limited to the development of draft laws and regulations, draft programmes, concepts, strategies and national and regional action plans on environmental protection, while other bodies took over the inspection and law enforcement functions, as well as the direct management of natural resources, including forests and specially protected natural areas. Moreover, the territorial branches of the Committee were simultaneously subordinate to the local executive authorities. Such double subordination was commonly justified by the argumentation that heads of oblasts, towns and districts are considered representatives of the President at the local level.

In 2015 the State Institution on Hydrometeorology subordinate to the Committee was transformed into the Hydrometeorology Agency (Tajikhydromet), remaining within the structure of the Committee. Another important subordinate organization was the State Institution “National Biodiversity and Biosafety Centre”, perceived as the only institution in Tajikistan in possession of comprehensive information biodiversity (including forests).

Cooperation between the newly established Forestry Agency and the Committee was rather weak, to say the least, and the power struggle was evident in case of several governmental resolutions appointing one or the other body to be the “specially authorized state body” on a particular issue, resulting in serious delays in the adoption of subsidiary legislation. Furthermore, the establishment of the Forestry Agency did not clarify the responsibility for the management of the PA system, as national parks and reserves remained managed by the State Institution of Specially Protected Natural Areas currently subordinate to the Forestry Agency, while 13 ‘zakaznik’ preserves remained managed by the forestry entities (“leskhozes”).

3EPR Recommendation 1.5 suggested that the Government should entrust the competency on all specially protected natural areas to the Committee on Environmental Protection. However, as Tajikistan did not provide the results of its self-assessment, the implementation of the above recommendation cannot be confirmed, also not on the basis of its 6CBD NR submitted in 2019.

In Uzbekistan the State Committee on Ecology and Environmental Protection (SCEEP) was the central state administrative body responsible for the development, coordination and implementation of national policies and state programmes for biodiversity conservation and sustainable use of natural resource. The scope of SCEEP competences included e.g., the state environmental control, interagency coordination on environmental issues, biodiversity conservation and PAs. However, the State Committee on Forestry had the mandate to develop and implement the state policy on forestry (incl. afforestation and reforestation), manage the state forest fund land and some PAs located on the state forest fund land, conduct the monitoring and research of the state forests, as well as flora and fauna within the land of the state forest fund.

Hence, at the time of the 3EPR there was no single central administrative body responsible for the planning and management of all PAs of different national categories (e.g., the SCEEP, as suggested by 1EPR Recommendation 8.1), which remained an impediment for the implementation of a coordinated policy for biodiversity conservation inside PAs, and for the effective management of the national PA system. Moreover, the responsibility for the management of particular PAs often shifted (mostly between the above 2 State Committees) according to the current circumstances, on the basis of resolutions adopted by the Cabinet of Ministers or decrees of the President. One PA remained under the responsibilities of the State Committee on Geology and Mineral Resources, while 10 other PAs were managed by oblast administrations (khokimiyats).

The key scientific institutions for biodiversity research, monitoring and conservation planning activities were the Academy of Sciences, and its Institutes of Botany, and of Zoology, while the Institute of the Gene Pool of Plants and Animals (which previously carried out scientific research on plant and animal genetics,
species populations, habitats and ecosystems, and IAS) ceased to exist as a result of reorganization. Other important stakeholders directly involved in biodiversity monitoring (e.g., wildlife census) and conservation activities were the environmental NGOs.

3EPR Chapter 1 (on legal, policy and institutional framework) reported that the public administration system was highly centralized (which somehow facilitated vertical coordination), but in 2017 a large-scale administrative reform started, which could provide for step-by-step decentralization, and delegation of more responsibilities to the local level. As for horizontal coordination, 3EPR noted that the number of inter-agency councils and commissions was drastically decreased in 2018, by dissolving as many as 81 bodies perceived as ineffective (e.g., the Republican Commission on Implementation of Additional Measures to Economize on and Rationally Use Paper).

As at early 2019, only the Coordination Council on Implementation of National Sustainable Development Goals (est. 2018), led by the Deputy Prime Minister and composed of ministers and vice-ministers, and the Republican Commission for Coordination and Control of Implementation of the State Programme for Development of the Aral Sea Region (est. 2017), led by the Prime Minister and composed of ministers and high-level governmental representatives were relevant, as partly related to biodiversity conservation issues.

**Conclusions:**

As clearly visible in the above brief summary on 3EPR country performance concerning the institutional framework and the coordination of its activities, clear division of responsibilities among the central authorities and efficient inter-ministerial and interagency coordination were missing in some countries, most often resulting in the disturbance of the information flow and duplication of efforts, sometimes also in competence conflicts and power struggles, with adverse effects on the effective implementation of state policies.

Due to the above, the concentration of all responsibilities for the conservation of ecosystems, habitats and species under one central authority largely prevents the competence conflicts and facilitates the coordination of measures that need to be implemented on the ground. However, this was the case only in one third of the 3EPR countries (Albania, Georgia, Mongolia, Romania, and Serbia).

Secondly, the proper positioning of such central environmental authority within the governmental structure can significantly enhance the implementation of state policies. The best practice example could be Mongolia, where the Ministry of Environment and Tourism was granted the status of a ‘core ministry’ (higher than of a ‘regular’ sectoral ministry), acknowledging the cross-sectoral importance of environmental issues, and the obvious dependence of numerous sectors on the state of environment (not only the economic ones, as human health and wellbeing is also highly dependent).

**Resulting recommendations for the fourth EPR cycle:**

EPR experts responsible for the chapter on biodiversity and PAs should first and foremost focus on the selected features of the institutional framework, verify and assess the following:

- which institutions are responsible for the enforcement of the national biodiversity-related legislation and effective implementation of biodiversity conservation policies (strategies, programmes and action plans)?
- how are the institutions in charge for biodiversity conservation positioned within the governing structures?
- are the responsibilities for biodiversity conservation and management of PAs cumulated or scattered among different sectors and administrative bodies?
- which are the resulting potential institutional conflict areas?
• are the administrative bodies and institutions responsible for biodiversity conservation and PA management provided sufficient legal mandate and adequately resourced?
• are these bodies and institutions supported by / cooperating with relevant scientific institutions and environmental NGOs?
• how are the central bodies and institutions connected to the regional and local administrative levels? (regional and local branches, relations to the regional and local self-governments, their bodies and institutions)
• how are the decisions concerning biodiversity conservation and PA management transposed into or reflected in spatial planning and land-use and development decisions at the central, regional and local levels?
• are the bodies and institutions in charge for biodiversity conservation stable or affected by the political instability associated with frequent changes in the Government structures, resulting in ‘revolutionary’ leadership and personnel changes, decrease of operational capacities and loss of institutional memory?
• is the division of responsibilities and competences between such bodies and institutions clear, or some overlaps of their statutory objectives, legal powers and responsibilities can be identified? (horizontal coordination)
• are the activities undertaken by the bodies and institutions in charge for biodiversity conservation at national, regional and local levels sufficiently coordinated? (vertical coordination)
• are there any institutionalized coordination mechanisms with defined roles and responsibilities, performance-based monitoring and evaluation systems which could accelerate the implementation of MEAs and national strategies, programmes and action plans concerning biodiversity conservation?

1.6.4. Regulatory, economic, fiscal and information measures

Methodological remarks

The general problem with this particular section of each EPR chapter on biodiversity and PAs is that the Terms of Reference for the involved EPR experts only indicate the four aspects of countries’ environmental performance to be covered (regulatory, economic, fiscal and information measures) in relation to biodiversity conservation, but do not further detail the expectations.

Moreover, the above thematic scope not only overlaps with several other EPR chapters (e.g., those concerning regulatory instruments and compliance assurance mechanisms, environmental information and education, implementation of international agreements and commitments, or economic instruments, environmental expenditure and investments for greening the economy), but also overlaps with the other sections of the chapter on biodiversity and PAs.

For example, permits and fees for the use of natural resources are often covered under the section on either the legal, policy, or institutional framework. Furthermore, the issue of state funding for the core budget and financing expenditures on the implementation of PA management plans (versus the self-financing from own revenues) is most often covered under the section on PA management (accordingly to the common saying that “conservation without money is just a conversation”), while the Red Books of species, that can be perceived as ‘information measures’ usually appear either in the section concerning threatened species, or biodiversity monitoring, or in the context of the national legal framework (as the Red Books should preferably result from and follow the formal adoption of the Red Lists of species officially granted the legal protective status in a particular country, as unfortunately “the Red Books without the Red Lists are just books”).

Due to the lack of clarity on which measures should be covered under this particular section, it seems that EPR experts fill it with any sort of relevant facts and findings not yet mentioned in previous sections of their chapter. However, most often the substantive scope of this section does not match the contents of the same section elaborated under the previous EPR cycle, while it cannot be guaranteed that the next EPR
In result, in EPR chapters on biodiversity and PAs, these subsections on regulatory, economic, fiscal and information measures are most often neither compatible with those of the previous EPR/s, nor with those from the other EPR reports, concerning the other countries.

The above does neither allow to track changes over the time and assess the progress made by a particular country (or the lack thereof), nor compare the performance by different countries, and conclude on trends in shaping such measures for the purposes of biodiversity protection and effective management of the ecological network.

Coverage of regulatory, economic, fiscal and information measures subject in 3EPR chapters on biodiversity and protected areas

Chapter 9 of the 3EPR of Albania did not contain a separate sub-section on regulatory, economic, fiscal and information measures. However, relevant measures were covered both under other EPR chapters as well as under the other sections of this chapter, e.g., the 10-year moratorium on logging for industrial purposes and export adopted in 2016 was mentioned under section 9.2 (on current situation in forests and forestry), section 9.3 (concerning pressures on species and ecosystems) and section 9.7 (on legal framework). The 2014 moratorium on hunting was mentioned section 9.3 (on pressures on species and ecosystems) and under section 9.7 (on legal framework), while the issues concerning PA financing, incl. the newly introduced rule on directing the revenues generated in PAs towards PA management (channelled through NAPA) were mentioned under section 9.5 (on PAs), although the provisions of the new Law on Protected Areas No. 81/2017 were not yet operational, in the absence of subsidiary legislation.

Chapter 7 of the 3EPR of Belarus referenced regulatory instruments, i.e., CITES permits and authorizations for removing wild animals and plants from their habitats, and two permits for the release of non-pathogenic GMOs. Other measures were mentioned under other sections, e.g., Red Data Books in the context of threatened species (section 7.1), regulations concerning allowed ammunition for hunting purposes and imposing a periodic hunting ban for waterfowl under section 7.5 (concerning legal framework), while the forestry certification system was elaborated under another chapter (Chapter 10 on forestry and environment).

Chapter 7 of the 3EPR of Bosnia and Herzegovina did not contain a separate relevant sub-section but mentioned the lack of funding for PAs under section 11.4 (concerning monitoring), and a number of Rulebooks (secondary legislation) regulating different procedures and activities under section 11.6 (concerning the legal framework).

Chapter 9 of the 3EPR of Bulgaria included two separate sub-sections: on funding, and on “Instruments and mechanisms for biodiversity conservation”, the latter mentioned the EU CAP agri-environmental schemes, as the only functioning form of payments for ecosystem services, the Forest Stewardship Council (FSC) certification, and the support by the Government for the green “labelling of businesses”. Red Data Book was mentioned under section 9.1 (on status and trends in biodiversity).

Chapter 6 of the 3EPR of Georgia did not contain a sub-section on regulatory, economic, fiscal and information measures. However, it mentioned controversies related to hunting regulations, and the lack of sufficient regulations concerning NTFPs collection under section 6.5 (on legal framework).

Chapter 9 of the 3EPR of Kazakhstan included 5 separate sub-sections, on regulatory measures (fees for the use of natural resources, and fines for environmental laws violations), economic measures (compensation scheme for private state forest land users), information measures (information system, state cadastres, planned geo-portal), shortcomings of the biodiversity-related information (analysing its
availability, accuracy and timeliness), and on Red Books (the last mentioned also under other relevant sections).

Chapter 9 of the 3EPR of the Republic of Moldova contained a sub-section “Communication and public awareness-raising”, which mentioned publications by the Academy of Sciences, and by NGO Eco-Tiras, information available on the internet, and radio broadcasts covering ecological issues. Quotas for NTFP harvesting were mentioned under section 9.3 (on pressures on species and ecosystems).

Chapter 11 of the 3EPR of Mongolia in sub-section “Regulatory, economic and information measures” elaborated on the legal basis for charging fees and payments for the use of natural resources, and the obligation to compensate for exceeding the permitted limits, fines and penalties for violations, as well as on the sources of available information on biodiversity. The next separate sub-section (“Red Lists of flora and fauna species”) noted Red Lists, Red Books, and corresponding “Summary Conservation Action Plans” indicating required conservation measures (which is a best practice example, worth recommending to other EPR countries). However, it should be emphasized that the term “Red List” should solely be reserved for the formally adopted lists of species protected by the national law (like the appendix to the 1995 Law on Natural Flora, listing “extremely rare” plant species in danger of extinction, automatically granting them legal protection in Mongolia).

Chapter 9 of the 3EPR of Morocco contained a separate section 9.4 “Policy, legal, regulatory, management and other measures”, but its sub-section “Regulatory measures” focused on impediments for the implementation of the environmental impact assessment (EIA) procedure, and lack of information concerning the actual application of the participatory approach, allowing the involvement of the public and key stakeholders in decision-making. Sub-section “Other measures” did not contain any new and meaningful information.

Chapter 11 of the 3EPR of North Macedonia included 3 separate sub-sections, on regulatory measures (five-year ban on the collection and trade in native wild fungi species), information measures (assessing the non-availability of data, and reporting on discrepancies between different information sources, and the National Biodiversity Information System, not yet operational at the time of the 3EPR), and on Red Books (missing at the time of the 3EPR, as the national red list of species threatened by extinction were not yet adopted).

Chapter 11 of the 3EPR of Romania under the sub-section “Regulatory, economic, fiscal and information measures” elaborated on fishing permits in Danube Delta Biosphere Reserve, entrance fees to PAs, and financing for biodiversity, forest and ecosystems (however in the last case only the total amounts of governmental expenditures on natural resources and biodiversity were provided, as Romania does not collect data on the SDG target 15.a).

Chapter 8 of the 3EPR of Tajikistan included a sub-section “Fees and revenues” concerning revenues from forestry operations and fees for the use of natural resources, incl. the sales of the firewood, NTFPs, fruit tree seedlings from state-owned nurseries and medicinal plants cultivated in forestry farms, as well as the pasturage tax (charged for livestock grazing in the “forestry” area), and the revenue from hunting both the “unlimited species” and in particular from commercial trophy hunting on “limited species” (threatened by extinction, listed in the Red Book of Tajikistan), the system of permits and fees for hunting was also extensively elaborated under section 8.3 (on pressures on forests and biodiversity). Separate sub-section “Red Book” was part of section 8.1 (current situation and trends in species and ecosystems). Financing the PA operations was covered under section 8.5 (on PAs).

Chapter 11 of the 3EPR of Uzbekistan included sub-section “Regulatory, economic and information measures”, divided into 4 parts: on regulatory measures (quotas for hunting and NTFPs collection, permits and fees for the use of forest resources, limits on the use of pastures within the state forest fund land), financing (incl. PA own revenues, sources of funding for PAs, and state budget incomes deriving from the forestry sector), information measures (e.g., the abandoned national CHM, and planned Biodiversity
Conservation Information Management System, and on the Red Books (four subsequent editions incompatible with the IUCN standards, and planned adjustment of threat status categories to those used in the Russian Federation).
2. Evaluation of the country performance on the implementation of EPR recommendations related to biodiversity and protected areas, and the status of achievement of related SDG targets

2.1. Implementation of EPR recommendations

This sub-section analyses the state of implementation of EPR recommendations related to biodiversity and PAs made since the first EPR by each of the 15 reviewed countries. This analysis was based on the EPR experts’ assessments available in 2EPR and 3EPR reports (concerning the implementation of recommendations from the 1EPR and 2EPR respectively), the contents of different chapters of 2EPR and 3EPR reports, the additional information provided by 11 countries to the ECE EPR team in late 2020, resulting from their own voluntary self-assessments of the state of implementation of the 3EPR recommendations (carried out between mid-July 2020 and the information cut-off date on 15 January 2021), and the 6CBD NRs recently submitted by most countries.

In case of Bulgaria, its 2EPR and 3EPR reports did not include the assessment of the rate of implementation of recommendations of the previous EPRs, but the progress concerning 3EPR recommendations has been self-assessed by the country. Belarus, Mongolia, and Tajikistan either did not undertake, or did not provide results of their self-assessment, but some information related to the implementation of their 3EPR recommendations was available in their 6CBD NRs. Due to the fact that the 3EPR of Romania has not been finalized by the time of drafting this assessment, its recommendations were not yet indicated, and the implementation thereof can only be assessed under the fourth EPR cycle.

This sub-section analyses also which aspects of activities related to biodiversity and PAs were most often addressed in EPR recommendations, in which aspects their implementation was at least satisfactory, and which were most challenging for the countries reviewed.

Methodological remarks

Firstly, it should be noted that each EPR report assessed the implementation of recommendations solely of the most recent (last) EPR, not all previous EPRs carried out for a particular country. In result, the progress concerning the implementation of 1EPR recommendations was assessed only at the time of 2EPR, while no re-assessment of 1EPR recommendations was required under 3EPR. Moreover, due to
different reasons, 3EPRs not always contained information which would allow such re-assessment. Thus, in many cases it is no longer possible to assess whether the recommendations of the second last (1st) EPR, previously evaluated as “in progress / ongoing” at the time of 2EPR, have finally been ‘fully implemented’, despite that perceived quite important at the time of 1EPR. In result, the continuity of ‘country response’ monitoring had been disturbed, and knowledge gaps sometimes occur, which can probably be avoided in the 4th and next EPR cycles.

Secondly, it should also be emphasized that EPR recommendations should not be perceived as an exhaustive full list, indicating all problem areas and remaining challenges identified by EPR experts where additional efforts are required. Each EPR expert, prior to the review, receives the written “Explanatory note on drafting process”, which explicitly instructs all experts that “Up to 5 recommendations are sufficient”. Hence, EPR experts have to select and address only a few challenges, considered most important and/or most urgent.

As emphasized in the above explanatory note for EPR experts, “Recommendations should also be as concise as possible, and be concrete, measurable and realistic”. However, an attempt to formulate a concise recommendation can sometimes result in shortening its wording at the expense of clarity, e.g., accordingly to Recommendation 9.3 of 2EPR of Tajikistan “The Government should: (a) Develop the management and monitoring of all types of protected areas in a coordinated way”, which can hardly be translated into the language of concrete and measurable actions, while the achievement of several different targets inscribed into such laconic (or even much longer and linguistically more complicated in other cases) ‘one-sentence’ recommendation cannot precisely be assessed under the next EPR.

Moreover, in many cases the recommended solutions include several subsequent steps, and/or require undertaking different complementary actions by different actors. In result, despite that the above instruction explicitly indicates that “The lists of recommendations or numerous bullet points should be avoided”, since 1EPR the number of bullet points constituting and detailing one recommendation was increasing (up to 10 bullet points, in Recommendation 11.2 of the 3EPR of Romania).

However, the more detailed the recommendation is, and the better its suggested subsequent and/or complementary actions are determined in separate bullet points, the more precise the ‘country response’ and its evaluation could be.

Thus, dividing a more complicated recommendation into several bullet points can probably be quite helpful, while too general recommendations might not necessarily indicate the comprehensive range of actions to be undertaken. For example, formulating a very general recommendations such as “The Ministry of Environment and Natural Resources Protection should develop and maintain a protected areas network” (Recommendation 6.2 of the 3EPR of Georgia) will not yet precisely indicate the required actions or their targets.

In situations such as the above quoted, an EPR expert in his/her recommendation should possibly refer to the relevant national strategy/strategies, usually determining the target value adopted by respective country, which achievement (or the lack thereof) could later be monitored and assessed under the next EPR, in line with the above “Explanatory note”, which emphasizes that the ultimate task of an EPR expert is “an evaluation of environmental performance, especially in terms of achieving the objectives set by the country itself”.

All EPR experts are usually informed that recurrent recommendations might be perceived by the Governments as offensive. Hence, if no progress in the implementation of a particular recommendation from a previous EPR or EPRs can be noticed while the issue still remains an important challenge, instead of merely repeating the recommendation/s from the previous EPR (exactly in the way such had previously been formulated), the expert should preferably analyse the reasons for the slow progress, and reformulate the recommendation in a way better indicating the suggested scope and logical sequence of activities that could lead to solving the problem, and result in desired “full implementation”.
The analysis below allows also for checking which fields of environmental performance related to biodiversity and PAs were most often addressed by EPR experts in their recommendations, either for a particular country, or under particular EPR cycles (which indicates both the trends in performance, and the evolving priorities).

However, it should be noted that the choice of issues and formulation of recommendations always (at least to a certain extent) depend on the professional background and experience of an EPR expert responsible for the chapter on biodiversity and PAs. Thus, a biologist will probably prioritize and focus more on issues related to the conservation of species and ecosystems, a forester will pay more attention to sustainable forest management, while a lawyer will focus more on the biodiversity-related legal framework, MEAs and law enforcement issues. The above has an obvious influence on the resulting set of recommendations, addressed to respective Governments.

Concerning the evaluation of the state of implementation of EPR recommendations, a difference between “partially implemented” and “in progress/on-going” ratings should be emphasized. The first indicates that the recommended action was implemented, but either not to the full extent indicated in respective EPR recommendation, or the action brought final results that can be evaluated as positive but still unsatisfactory, different from initially expected. This rating indicates also that the recommended action has already ended, so that the further progress towards the desired “full implementation” can no longer be expected. On the contrary, “in progress/on-going” rating implies that the recommended action is still being implemented, so that the desired “full implementation” can be expected later, once the action is completed.

Last, but not least, the “not implemented” rating should be perceived as a warning sign, indicating that either some serious obstacles or locally specific circumstances impaired or made the implementation of an EPR recommendation not possible, or that the recommendation itself was overambitious and non-compatible with the human, operational and financial capacities of the addressed authority, and/or the state of advancement of a country in a given field. Considering the length of the period between subsequent EPRs, in some cases the weak implementation or the lack thereof could also result from the situation when the addressed authority or institution ceased to exist, as a result of a recent re-organization.

In addition to the analysis of the state of implementation of EPR recommendations by particular countries, assessed in their subsequent EPR reports (in case of the most recent 3EPR recommendations - self-assessed in 2020 by most countries) and the identification of trends in the rate of implementation, another interesting issue can simultaneously be analysed: “which substantive aspects of environmental performance related to biodiversity conservation were most often addressed in EPR recommendations?”. The results of such analysis can indicate which were the main, most common challenges for EPR countries.

Furthermore, having assessed the state of implementation of EPR recommendations by countries, it is also possible to analyze which activities related to biodiversity and PAs were most successful, and which kind of recommendations were most challenging for EPR countries to implement.

Both above analyses required grouping the recommendations from all EPR cycles under several (15) thematic headings, corresponding with the ‘standard’ scope of contents of the 3EPR chapters on biodiversity and PAs.

Key to 15 thematic headings, used in tables, indicating the main subject of EPR recommendation:

- species: measures directly targeted at species conservation
- ecosystem: measures directly targeted at ecosystem conservation
- forestry: issues related to sustainable forest management
- pressures: issues related to minimizing the adverse effects of pressures
- monitoring: issues related to monitoring of ecosystems (incl. forests) and biodiversity
- PA / econet: issues related to PA and ecological networks development and management
- MEA: issues related to the accession to, and enforcement of MEAs
- legal: recommended improvements of the legal framework
It should be reminded that a Red Book should be perceived only as an officially approved result of biodiversity monitoring and research studies (indicating e.g., the rarity and risk of particular species extinction) while an officially adopted Red List always has immediate implications of legal nature, resulting from the provisions of national legislation concerning species protection, providing a protective status to the species, usually followed by detailed restrictions on e.g., taking the species from environment etc. Due to the above, EPR recommendations referring to Red Books of threatened species are classified in this assessment as monitoring-related, while recommendations referring to Red Lists of legally protected species as policy-related ones.

Considering that all EPRs are easily accessible online, quoting the full text of each relevant EPR recommendation and the assessment of its implementation done under the next EPR cycle (or based on recently acquired information) was necessary, and had to be avoided. Otherwise, taking into account that the reviewed 40 EPR reports contained as many as 363 relevant recommendations in total (related to biodiversity and PAs), the application of a technically simple ‘copy-paste’ approach would extend this subsection to some 100–150 pages, thus well beyond any reasonable limits. Instead of quoting the full text of the EPR recommendation, its main subject was briefly indicated, whenever possible. Furthermore, no text justifications of assessments and comments were quoted, only the general ratings of the state of implementation of EPR recommendations were provided. However, for the benefit of future EPRs, the ‘rating process logic’ has been explained on the example of Uzbekistan (in which case the ratings assigned in this assessment sometimes differed from those previously self-assigned in the process of country self-assessment).

In order to facilitate an immediate intuitional interpretation of results, different ratings were visualized with the use of different colours (like in Annex I to the draft 3EPR of Romania, containing a summary overview of implementation of its 2EPR recommendations).

**Key to colours** used in tables, indicating the rating of the state of implementation of EPR recommendations:

<table>
<thead>
<tr>
<th>Colour</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>not implemented</td>
</tr>
<tr>
<td>yellow</td>
<td>partially implemented</td>
</tr>
<tr>
<td>light green</td>
<td>in progress / ongoing</td>
</tr>
<tr>
<td>green</td>
<td>fully implemented</td>
</tr>
<tr>
<td>blue</td>
<td>no longer relevant</td>
</tr>
<tr>
<td>grey</td>
<td>no data / no response*</td>
</tr>
</tbody>
</table>

* in case no information was provided by a country, to enable the ECE team to assess the status of implementation of recommendations made in its latest EPR.

In each case, the number of EPR cycle and of particular recommendation was provided, to facilitate checking its full text and justification of its implementation assessment (available in respective subsequent EPR reports). Moreover, to facilitate summary analyses and comparisons between countries, the ISO 3166-1 alpha-3 country code was always indicated in tables below. The year of EPR reports publication was also mentioned, in order to allow assessing the time span between addressing the recommendation and assessing its state of implementation.

As for the most recent (as of 2020) status of implementation of EPR recommendations, the ratings indicated below were based on information deriving from different sources, in particular the additional
information provided by 11 countries to the ECE EPR team in late 2020, the SDG-related VNRs (submitted by all 3EPR countries between 2016 and 2020), as well as other sources used for this assessment, e.g., the most recent 6 CBD NRs, the RSIS database, or national databases on biodiversity.

However, the ratings of the state of implementation of the 3EPR recommendation in tables below do not necessarily follow those self-assigned by countries as a result of their self-assessment, which is well explained on the example of Uzbekistan, and adequately justified in comments below the table concerning this country.

2.1.1. Implementation of EPR recommendations by country

Albania

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Thematic heading</th>
<th>Main subject</th>
<th>Rate of implementation assessed in:</th>
</tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2EPR</td>
</tr>
<tr>
<td>ALB 1</td>
<td>8.1</td>
<td></td>
<td>PA / econet</td>
<td>PA management plans development</td>
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</tr>
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<td>ALB 1</td>
<td>8.2</td>
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</tr>
<tr>
<td>ALB 1</td>
<td>8.3</td>
<td></td>
<td>species</td>
<td>legal &amp; institute. – medicinal &amp; aromatic plants</td>
<td></td>
</tr>
<tr>
<td>ALB 1</td>
<td>8.4</td>
<td></td>
<td>forestry</td>
<td>reforestation &amp; forest protection</td>
<td>slow progress</td>
</tr>
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<td>ALB 1</td>
<td>8.5</td>
<td></td>
<td>PA / econet</td>
<td>wetlands protection as Ramsar and PAs</td>
<td>no recent progress</td>
</tr>
<tr>
<td>ALB 2</td>
<td>8.1</td>
<td></td>
<td>capacity</td>
<td>forest techn. expertise for local govern. units</td>
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</tr>
<tr>
<td>ALB 2</td>
<td>8.2</td>
<td></td>
<td>capacity</td>
<td>training and technical expertise – forest users</td>
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</tr>
<tr>
<td>ALB 2</td>
<td>8.3</td>
<td></td>
<td>monitoring</td>
<td>info system on forests, biodiversity &amp; PAs</td>
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</tr>
<tr>
<td>ALB 2</td>
<td>8.4</td>
<td></td>
<td>PA / econet</td>
<td>extension &amp; design. of ecological network</td>
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</tr>
<tr>
<td>ALB 3</td>
<td>9.1 (a)</td>
<td></td>
<td>monitoring</td>
<td>institut. structure - biodiv. monitoring in PAs</td>
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<tr>
<td>ALB 3</td>
<td>9.1 (b)</td>
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<td>funding</td>
<td>increase fund for forests &amp; biodiv. monitoring</td>
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</tr>
<tr>
<td>ALB 3</td>
<td>9.2 (a)</td>
<td></td>
<td>capacity</td>
<td>forestry: assistance for local govern. units</td>
<td>n/a</td>
</tr>
<tr>
<td>ALB 3</td>
<td>9.2 (b)</td>
<td></td>
<td>capacity</td>
<td>capacity build. for local govern. units</td>
<td>n/a</td>
</tr>
<tr>
<td>ALB 3</td>
<td>9.3</td>
<td></td>
<td>legal</td>
<td>dev. legal act on HNV forests and NTFPs</td>
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</tr>
<tr>
<td>ALB 3</td>
<td>9.4</td>
<td></td>
<td>forestry</td>
<td>national forest certification</td>
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</tr>
</tbody>
</table>

The above table indicates that the main remaining challenges for Albania include an operational national monitoring system (including information system on forests, biodiversity, and PAs), and enhancing the ecological connectivity of its PA/ecological network (which can partially be achieved upon the adoption of nominated ASCIs). Setting the quota for the collection of medicinal and aromatic plants should also possibly be verified under the fourth EPR cycle.

Belarus

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Thematic heading</th>
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<td>strengthen mgmt. and control of PAs</td>
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</table>
The above table indicates that the recommended consolidation of responsibilities related to biodiversity conservation under the Ministry of Natural Resources and Environmental Protection was not realistic, and that the Presidential administration (State Inspectorate on Fauna and Flora Protection under the President) kept its crucially important competencies, concerning hunting, fishing, forest and land protection, and PA management. Granting the legal protective status to the components of the recently established National Ecological Network, IBAs and IPAs, as well as the implementation of the 2014 “Scheme for the rational location of republican specially protected natural areas until 1 January 2025” should possibly be verified and assessed under the fourth EPR cycle of Belarus.

Bosnia and Herzegovina

| BIH 2  | 9.2 (b) | institutional entity Working Groups to draft entity RDBs | n/a | Red? entity RDBs exist | BIH 2  | 9.2 (c) | information RDB education and awareness | n/a | BIH 2  | 9.3 (a) | MEA CITES mgmt authority | n/a | BIH 2  | 9.3 (b) | MEA CITES implementation group | n/a | BIH 2  | 9.3 (c) | legal CITES related regulations | n/a | BIH 2  | 9.4 (a) | monitoring inventory of game species | n/a | BIH 2  | 9.4 (b) | policy hunting grounds delineation & mgmt plans | n/a | BIH 2  | 9.4 (c) | coordination CITES related, for game species and NTFPs | n/a | BIH 2  | 9.4 (d) | regulatory new economic instruments Re: hunting | n/a | BIH 2  | 9.5 (a) | legal new law on forests | n/a | See 3/12.2 (a) | BIH 2  | 9.5 (b) | regulatory FSC incorporation to forest mgmt plans | n/a | BIH 2  | 9.5 (c) | forestry entity forest strategies | n/a | BIH 2  | 9.5 (c) | capacity training and capacity building | n/a | BIH 2  | 9.5 (c) | coordination inter-entity coordin. for sustainable forestry | n/a | BIH 2  | 9.5 (d) | capacity guidance of European and global forest appr. | n/a | BIH 2  | 9.6 (a) | PA / econet assess representativeness, implem. IUCN cat | n/a | Red? representativeness? | BIH 2  | 9.6 (a) | PA / econet extend PA network | n/a | Yellow? lowest PA coverage | BIH 2  | 9.6 (a) | PA / econet PA legal status for Ramsar sites | n/a | Red? no progress | BIH 2  | 9.6 (a) | PA / econet AP for Natura 2000 preparation | n/a | Yellow? 29 potential ASCIs | BIH 2  | 9.6 (b) | PA / econet entity level PA cadasters | n/a | BIH 2  | 9.5 (a) | regulatory law enforcement spatial planning & construct | n/a | BIH 3  | 9.5 (b) | PA / econet small coastal PAs along Adriatic coastline | n/a | Bot. reserve planned | BIH 3  | 11.1 | policy implement NBSAP | n/a | BIH 3  | 11.2 | institutional FBiH: establish institute on nature protection | n/a | BIH 3  | 11.2 | capacity RS: strengthen Institute ProtCHNatHeritage | n/a | Red? on project basis | BIH 3  | 11.3 | coordination sharing biodiversity data | n/a | BIH 3  | 11.3 | coordination inter-sectoral, for NBSAP implementation | n/a | Slow progress | BIH 3  | 11.4 | monitoring database species & habitats for Natura 2000 | n/a | BIH 3  | 11.5 | MEA ratify CBD Nagoya Protocol | n/a | BIH 3  | 12.1 | (a) regulatory facilitate certification in private forests | n/a | BIH 3  | 12.1 | (b) capacity advisory/financ. support private forest owners | n/a | Red? not Govt. responsib | BIH 3  | 12.1 | (c) forestry improve silviculture in private forests | n/a | Red? not Govt. responsib | BIH 3  | 12.2 | (a) legal adopt “draft law” on forests | n/a | BIH 3  | 12.2 | (a) forestry adopt forestry strategy | n/a | BIH 3  | 12.2 | (b) information awareness raising Re: forest potential | n/a | BIH 3  | 12.2 | (c) coordination involve academia, NGOs etc. in forest policy | n/a | BIH 3  | 12.3 | monitoring RS: forest database improvements | n/a | BIH 3  | 12.4 | coordination harmonize forest reporting, implem. internat. | n/a |
The above table indicates that Bosnia and Herzegovina adopted its second NBSAP for 2015–2020, however no information on the progress in drafting a subsequent one for the next period is available. Red Lists of endangered species adopted by the two entities remain non-harmonized, and do not follow relevant IUCN methodology. The progress in extension of PA networks is slow, in result the PA coverage of the country’s territory is the smallest among all 3EPR countries. An obvious achievement is the establishment of Information Systems for Nature Conservation at the entity level. However, the majority of EPR recommendations had not yet been implemented.

**Bulgaria**


Note: 2EPR and 3EPR reports of Bulgaria did not contain relevant Annexes assessing the status of implementation of recommendations made in previous EPRs, but their contents sometimes allowed the below assessment.

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In 2020, when informing the ECE team on the results of the self-assessment of rate of implementation of the 3EPR recommendations, Bulgaria did not inform on the possible progress in increasing the coverage of its territory by PAs of the strict protective regime. Although the country already exceeded the ABT11 minimum threshold concerning the protection of terrestrial and inland water areas, the above was due to the exceptionally high coverage by Natura 2000 sites (34.92 per cent), while the share of PAs of national...
categories accounted for 5.27 per cent, including strict reserves which covered only 0.69 per cent of the country’s territory. The establishment of 58 ‘microreserves’ (aimed at the preservation of rare and threatened plant species of national importance) in 2010–2014 under the EU Life+ Programme was a good practice which should probably be continued, pursuant to 3EPR Recommendation 9.2 (c).

The progress in the above, as well as the results of the implementation of the National Action Plan for Conservation of Wetlands of High Significance in Bulgaria 2013–2022, and the adoption and implementation of an update NBSAP should possibly be verified under the fourth EPR cycle.

Georgia

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The above table indicates that Georgia already implemented several relevant EPR recommendations, while the implementation of the remaining ones is still ongoing. However, implementation of 2EPR Recommendation 9.5 (setting hunting quota on the basis of results of appropriate research on game numbers and population dynamics) should possibly be verified under the fourth EPR cycle of Georgia.
**Kazakhstan**


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<td>9.4 (a)</td>
<td>PA / econet</td>
<td>extend PA network / representativeness</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>KAZ</td>
<td>3</td>
<td>9.4 (b)</td>
<td>PA / econet</td>
<td>raising legal protective status of “zakazniks”</td>
<td>n/a n/a</td>
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<tr>
<td>KAZ</td>
<td>3</td>
<td>9.4 (c)</td>
<td>PA / econet</td>
<td>support local initiatives ecological corridors</td>
<td>n/a n/a</td>
<td></td>
</tr>
</tbody>
</table>

* Recommendation 10.1 of 1EPR of Kazakhstan was not enough precise and far too complex: “The progressive implementation of a comprehensive management system for both nature use and biodiversity conservation should aim at (a) the completion of the legislative framework (particularly with the development of legal instruments regulating sustainable use and protection of nature components, especially plants) and an increased level of local and regional management responsibilities, (b) the adequate programming and funding of relevant research activities, and (c) the improvement of nature use practices with the help of public awareness campaigns and education efforts. The systematic improvement of information on all species present in the country, their possible use, their habitats and the most important threats to their conservation should be seen as a precondition for the implementation of such a management system. See Recommendations 1.4, 1.5, 8.3, 12.1 and 12.3.”.

** Recommendation 10.2 of 1EPR of Kazakhstan simultaneously concerned PA network representativeness, IAS, and biodiversity monitoring: “The protected area system should be made more representative of all the typical ecosystems in the country, and afford reliable protection for the total number of endangered species. The protected area categories should also be harmonized with internationally accepted practices. The ecosystems of deserts and semi-deserts, wetlands and other aquatic ecosystems and their native species seem to be in particular need of protection. The introduction of alien species, in particular into aquatic ecosystems, should be strictly controlled. Special research efforts are required to improve the knowledge of species, habitats and biodiversity”.

The progress in the adoption and enforcement of the Law “On the Plant World” (submitted in 2020 to the Mazhilis of the Republic of Kazakhstan), the development, adoption and implementation of the revised NBSAP, as well as the endorsement and implementation of the 2015 “Concept for the conservation and sustainable use of biodiversity in the Republic of Kazakhstan until 2030” should possibly be verified under the fourth EPR cycle.
Republic of Moldova  

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Thematic heading</th>
<th>Main subject</th>
<th>Rate of implementation</th>
<th>Comments</th>
</tr>
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<td>policy</td>
<td>NBSAP</td>
<td>2EPR 3EPR 2020</td>
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<td>MDA 1</td>
<td>6.2</td>
<td></td>
<td>PA / econet</td>
<td>excluding HNV lands from privatization</td>
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<td>MDA 1</td>
<td>6.3</td>
<td></td>
<td>PA / econet</td>
<td>PA strategy/ transbound. connect / harmoniz.</td>
<td>2007 NEN law?</td>
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<td>MDA 1</td>
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<td></td>
<td>institutional</td>
<td>separate forest policy from forest mgmt</td>
<td>not implemented</td>
<td>Rec. not realistic?</td>
</tr>
<tr>
<td>MDA 1</td>
<td>6.6</td>
<td></td>
<td>forestry</td>
<td>forest AP, incl. afforestation</td>
<td>6CBD NR</td>
<td></td>
</tr>
<tr>
<td>MDA 1</td>
<td>6.7</td>
<td></td>
<td>legal</td>
<td>enforcement illegal logging poaching fishing</td>
<td>not implemented</td>
<td>6CBD NR</td>
</tr>
<tr>
<td>MDA 2</td>
<td>7.2</td>
<td></td>
<td>institutional</td>
<td>MENR lead role land mgmt afforestation</td>
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<tr>
<td>MDA 2</td>
<td>7.3</td>
<td></td>
<td>capacity</td>
<td>national GIS / land cadastre</td>
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<tr>
<td>MDA 2</td>
<td>7.5</td>
<td></td>
<td>legal</td>
<td>amend Forest Code MENR lead afforestation</td>
<td>n/a</td>
<td>see 3/9.1</td>
</tr>
<tr>
<td>MDA 3</td>
<td>9.1</td>
<td></td>
<td>monitoring</td>
<td>finalize NFI</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA 3</td>
<td>9.2</td>
<td></td>
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<td>prepare new Law on PAs</td>
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<td>n/a</td>
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<td>policy</td>
<td>species conserv &amp; habitat restor agriculture</td>
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<td>n/a</td>
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<td>MDA 3</td>
<td>9.4 (a)</td>
<td></td>
<td>policy</td>
<td>incl. ecosystem adaptation in CChange Strat</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>MDA 3</td>
<td>9.4 (b)</td>
<td></td>
<td>legal</td>
<td>finalize draft Law on landscapes</td>
<td>n/a</td>
<td>n/a</td>
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</tbody>
</table>

According to 6CBD NR, the National Plan for the extension of the forest vegetation areas for the years 2014–2018 was approved by the Government Decision no. 101 of 10.02.2014, which indicates at least the partial implementation of 1EPR Recommendation 6.6. NBSAP for 2015–2020 stipulated the extension of the forest to 15 per cent of the country’s territory, which can therefore possibly be verified under the fourth EPR cycle.

As reported in 3EPR, the National Programme on the Environmental Network for 2011–2018 was “based on existing PAs and afforestation of degraded sites rather than on effective increase in the area for conservation”. Due to the above, 1EPR Recommendation 6.3 has been assessed above as ‘not implemented’. The fourth EPR cycle could also investigate possible revisions to the above National Programme, and the progress in the enforcement of the 2007 Law on the National Environmental Network.

Although the proposed law on landscapes (drafted in 2011) has not been adopted, neither as a separate legal act (draft not accepted for further proceeding) nor as an amendment to the Code on Urbanism and Construction (returned by the Parliament to the Government), its provisions can be included in the amended Law no. 835/1996 on the principles of urbanism and spatial planning, which can possibly be verified under the fourth EPR cycle.

Mongolia (2018*)
* 1st EPRs of Mongolia was carried out according to the methodology of the third cycle of ECE EPRs.

Although Mongolia did not inform in 2020 on any results of its self-assessment of the rate of implementation of EPR recommendations of 2018, some relevant information was present in its 6CBD NR (submitted in 2019).
| MNG 3* 11.1  | (a) monitoring | biodiversity & research programmes | n/a | n/a |
| MNG 3* 11.1  | (b) policy    | update Red Lists, draft 2nd part RL of plants | n/a | n/a | 2019 RL of plants |
| MNG 3* 11.1  | (c) information | biodiversity system | n/a | n/a |
| MNG 3* 11.1  | (d) information | biodiversity metadatabase | n/a | n/a |
| MNG 3* 11.2  | (a) policy    | evaluate effective & revise natl APs species | n/a | n/a | 6CBD NR |
| MNG 3* 11.2  | (b) policy    | new natl. APs on species | n/a | n/a | 6CBD NR |
| MNG 3* 11.3  | (a) PA / econet | evaluate current PA zoning pattern | n/a | n/a |
| MNG 3* 11.3  | (b) PA / econet | revise PA zoning & modify PA mgmt plans | n/a | n/a |
| MNG 3* 11.3  | (c) PA / econet | extend PA network / representativeness/mountain | n/a | n/a | 6CBD NR |
| MNG 3* 11.3  | (d) capacity  | spatial planning tools for PA netw. extension | n/a | n/a |
| MNG 3* 11.4  | (a) capacity  | human and technical capacity for MET | n/a | n/a |
| MNG 3* 11.4  | (b) capacity  | monitoring & outdoor equipment, vehicles | n/a | n/a |
| MNG 3* 11.4  | (c) funding   | salaries attract. profession / young scientists | n/a | n/a |
| MNG 3* 11.5  | (a) PA / econet | PA mgmt. plans development/revision/implementation | n/a | n/a |
| MNG 3* 11.6  | (a) legal     | 1994 SPA Law revision | n/a | n/a | submitted 11/2018 |
| MNG 3* 11.6  | (b) PA / econet | programme on PA network extension | n/a | n/a | revised 2017-18 |
| MNG 3* 11.6  | (c) regulatory | PA entrance fees for PA funding | n/a | n/a | revised SPA Law |
| MNG 3* 11.6  | (d) regulatory | land use fees for PA funding | n/a | n/a | draft by-laws 6NR |
| MNG 3* 11.6  | (e) regulatory | tourism sector fees for PA funding | n/a | n/a |
| MNG 3* 11.6  | (f) pressures  | minimize impact private transport in PAs | n/a | n/a |
| MNG 3* 13.1  | (a) forestry  | revise 2015 State Policy on Forests | n/a | n/a |
| MNG 3* 13.1  | (b) forestry  | dev. sustainable forestry criteria & indicators | n/a | n/a |
| MNG 3* 13.1  | (c) forestry  | dev. national sust. forestry certification | n/a | n/a |
| MNG 3* 13.2  | (a) capacity  | equipment & training intersoum forest units | n/a | n/a |
| MNG 3* 13.2  | (b) regulatory | forestry org. licensing | n/a | n/a |
| MNG 3* 13.3  | (a) legal     | forest user groups status and legal rights | n/a | n/a |
| MNG 3* 13.3  | (b) coordination | avoid mining licenses impact on forest use | n/a | n/a |
| MNG 3* 13.4  | (a) pressures  | assess impact forest mgmt on forest ecosystem | n/a | n/a |
| MNG 3* 13.6  | (a) monitoring | evaluate reforestation/afforestation effectiveness | n/a | n/a |
| MNG 3* 13.6  | (b) funding   | increase funding for effective forest mgmt. | n/a | n/a |

The evaluation of the effectiveness of the previously adopted species conservation action plans has not yet taken place in Mongolia, which shall result, where deemed necessary, in their revision and modification, as well as followed by the development, adoption, and implementation of new action plans. The above table
indicates that the implementation of several other EPR recommendations is progressing, however the recently submitted 6CBD NR does not contain enough information necessary to assess the implementation rate of the vast majority of remaining recommendations, which shall therefore possibly be done under the fourth EPR cycle.

Montenegro

* Montenegro became an independent country in 2006, previously covered by the 1st EPR of Yugoslavia.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
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<th>Rate of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNE</td>
<td>1</td>
<td>3.3 (a)</td>
<td>monitoring</td>
<td>prepare periodic reports</td>
<td>2EPR</td>
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<tr>
<td>MNE</td>
<td>1</td>
<td>3.3 (b)</td>
<td>capacity</td>
<td>training for monitoring staff</td>
<td>6CBD NR</td>
</tr>
<tr>
<td>MNE</td>
<td>1</td>
<td>3.4</td>
<td>monitoring</td>
<td>add life parameters to water/riverine</td>
<td>6CBD NR</td>
</tr>
<tr>
<td>MNE</td>
<td>1</td>
<td>4.5 (a)</td>
<td>policy</td>
<td>NBSAP &amp; CHM</td>
<td>see 1/9.3 CHM?</td>
</tr>
<tr>
<td>MNE</td>
<td>1</td>
<td>9.1</td>
<td>legal</td>
<td>harmonize nat. protect. legislat. w. internat.</td>
<td>EU Directives</td>
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<tr>
<td>MNE</td>
<td>1</td>
<td>9.2 (a)</td>
<td>legal</td>
<td>intersectoral law harmonization</td>
<td>EU framework</td>
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<tr>
<td>MNE</td>
<td>1</td>
<td>9.2 (b)</td>
<td>policy</td>
<td>reflect harmonized laws in mgmt plans</td>
<td>EIAs</td>
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<tr>
<td>MNE</td>
<td>1</td>
<td>9.3</td>
<td>policy</td>
<td>NBSAP</td>
<td>NBSAP 2021-?</td>
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<tr>
<td>MNE</td>
<td>1</td>
<td>9.4</td>
<td>PA / econet</td>
<td>develop &amp; implement NP mgmt plans</td>
<td>6CBD NR</td>
</tr>
<tr>
<td>MNE</td>
<td>1</td>
<td>9.5</td>
<td>policy</td>
<td>develop &amp; implement sus. forestry strategy</td>
<td>NFS 2014–2023</td>
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<tr>
<td>MNE</td>
<td>2</td>
<td>3.1</td>
<td>capacity</td>
<td>MTE capacity for int.coop/MEAs/EU access</td>
<td>project impl. unit?</td>
</tr>
<tr>
<td>MNE</td>
<td>2</td>
<td>3.3</td>
<td>MEA</td>
<td>ratify, designate NFPs, dev. implement plans</td>
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<tr>
<td>MNE</td>
<td>2</td>
<td>6.4</td>
<td>PA / econet</td>
<td>dev/implement PA mgmt plans for all PAs</td>
<td>6CBD NR</td>
</tr>
<tr>
<td>MNE</td>
<td>3</td>
<td>1.2</td>
<td>policy</td>
<td>improve quality of strategic planning docs</td>
<td>NBSAP 2021–?</td>
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<tr>
<td>MNE</td>
<td>3</td>
<td>5.2</td>
<td>funding</td>
<td>ensure fund. for commitments on MDG7</td>
<td>self-assessment</td>
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</table>

The above table indicates that Montenegro has already successfully implemented several 1EPR recommendations. However, not enough information is available to assess the progress in several fields, as neither 2EPR nor 3EPR of Montenegro contained a separate chapter on biodiversity and PAs (in result the biodiversity-related issues have been last assessed under 1EPR of Yugoslavia in 2002, almost two decades ago).

The progress in the development, endorsement and implementation of the new strategic policy documents concerning the next periods (in particular NBSAP after 2020, and the Forest and Forestry Development Strategy after 2023) should possibly be assessed under the fourth EPR cycle of Montenegro.

Morocco
(2014*, 2021**)

* 1st EPR of Morocco was carried out according to the methodology of the third cycle of ECE EPRs.
** In 2020 Morocco informed the ECE team on the results of its self-assessment of rate of implementation of the 3EPR recommendations, however the above has later been re-assessed in the course of the next (currently ongoing) EPR.

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>MAR</td>
<td>3*</td>
<td>1.1 (a)</td>
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<td>restore ministry status nat. env. authority</td>
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</table>

The progress in the development, endorsement and implementation of the new strategic policy documents concerning the next periods (in particular NBSAP after 2020, and the Forest and Forestry Development Strategy after 2023) should possibly be assessed under the fourth EPR cycle of Montenegro.

Morocco
(2014*, 2021**)

* 1st EPR of Morocco was carried out according to the methodology of the third cycle of ECE EPRs.
** In 2020 Morocco informed the ECE team on the results of its self-assessment of rate of implementation of the 3EPR recommendations, however the above has later been re-assessed in the course of the next (currently ongoing) EPR.
According to the draft (currently ongoing) second EPR of Morocco, in 2015 the Coastal Law (No. 81-12) was adopted (in line with EPR Recommendation 1.4), although its implementation through the integrated management of coastal zones should be monitored and assessed in the future EPRs. The legislation concerning environmental monitoring, assessment and reporting (Recommendation 3.1) and the protection of sensitive oasis and mountain ecosystems (Recommendation 9.5) has not yet been adopted. In 2019 the national evaluation of biodiversity and ecosystem services was launched, which should facilitate the analysis of knowledge gaps relating to Moroccan biodiversity and elaboration of a research plan. Furthermore, several scientific assessments (named as “Red Lists”, although probably not formally adopted) were recently published, concerning the status of conservation of flora, bird, and dragonfly species respectively. The above allowed “in progress / ongoing” rating of the state of implementation of EPR Recommendation 9.1.

Similarly, the establishment of the National Commission for Climate Change and Biological Diversity in 2020 should largely facilitate the consultation and development of cross-sectoral and interdisciplinary biodiversity conservation initiatives (in line with EPR Recommendation 9.4). However, according to the draft second EPR report, coordination among the various sectoral ministries and departments on the national level as well as in relation with regional authorities remains insufficient, so that EPR Recommendation 1.1 (d) has not yet been implemented. The 2020 report by the Court of Auditors indicated that capacities for implementation and enforcement of conservation measures are still insufficient, hence Recommendation 9.2 (b) has not yet been implemented.

North Macedonia

The below indicated ratings concerning the state of implementation of the 3EPR recommendations by North Macedonia follow the findings of its self-assessment, communicated in 2020 to the ECE team. North Macedonia has not yet submitted its 6CBD NR, thus no other information sources were available at the time of drafting this assessment.

<table>
<thead>
<tr>
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<th>Rate of implementation</th>
<th>Comments</th>
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<td>see 1/9.4(c)</td>
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<tr>
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<td>valid until 2026</td>
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</tr>
<tr>
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</tr>
<tr>
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<tr>
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<td>PA reevaluation / reproclamation</td>
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<tr>
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<td>PA / econet</td>
<td>extend PA network ensure representativeness</td>
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<tr>
<td>MKD 2</td>
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<td>adopt mgmt plans for all PAs</td>
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<tr>
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<td>9.4 (d)</td>
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<td>Emerald Network / Nat. Ecological Network</td>
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<td>n/a</td>
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<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>6.2 (a)</td>
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<td>revise law/strategies HPP impact PAs/biodiv</td>
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<td>n/a</td>
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<tr>
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<td>monitor air pollution impact on ecosystems</td>
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<td>n/a</td>
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<tr>
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<td>monitoring</td>
<td>programme on biodiv. and IAS monitoring</td>
<td>n/a</td>
<td>n/a</td>
<td>**</td>
</tr>
<tr>
<td>MKD 3</td>
<td>11.1 (b)</td>
<td>funding</td>
<td>fund biodiv monitoring and research</td>
<td>n/a</td>
<td>n/a</td>
<td>**</td>
</tr>
<tr>
<td>MKD 3</td>
<td>11.1 (c)</td>
<td>monitoring</td>
<td>threatened species inventory / assessment</td>
<td>n/a</td>
<td>n/a</td>
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</tr>
<tr>
<td>MKD 3</td>
<td>11.1 (d)</td>
<td>policy/mon.</td>
<td>Red Lists/RBs update 2011 List prot. species</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
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<tr>
<td>MKD 3</td>
<td>11.2 (a)</td>
<td>monitoring</td>
<td>research on forest ecosystems and habitats</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>11.3 (a)</td>
<td>policy</td>
<td>wetlands conservation nat. policy/program</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>11.3 (b)</td>
<td>policy</td>
<td>ecosystem &amp; species conserv. APs/programs</td>
<td>n/a</td>
<td>n/a</td>
<td>in the past</td>
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<tr>
<td>MKD 3</td>
<td>11.3 (c)</td>
<td>funding</td>
<td>for wetlands, ecosystems &amp; species conserv</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>11.4 (a)</td>
<td>PA / econet</td>
<td>complete PA reevaluation / reproclamation</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>11.4 (b)</td>
<td>PA / econet</td>
<td>identify N2000 sites &amp; Nat.Ecolog.Net areas</td>
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<td>n/a</td>
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</tr>
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<td>MKD 3</td>
<td>11.4 (c)</td>
<td>PA / econet</td>
<td>extend PA netw. increase representativeness</td>
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<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>11.5 (a)</td>
<td>coordination</td>
<td>for implem. biodiv/nature conserv. policies</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>11.5 (b)</td>
<td>coordination</td>
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<td>n/a</td>
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<td>MKD 3</td>
<td>11.5 (c)</td>
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<td>establish national council nature protection</td>
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<td>n/a</td>
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<tr>
<td>MKD 3</td>
<td>11.5 (d)</td>
<td>capacity</td>
<td>regular training biodiv/nature conserv.</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>
* the implementation status of some 2EPR recommendations assessed in 3EPR as “partially implemented” (which was a general rating, related to the status of the whole recommendation, despite that its contents was divided into several alphabetically numbered itemized parts) received different ratings above than provided in 3EPR, in order to ensure compatibility with the more detailed approach of this assessment (separate rating for each alphabetically numbered itemized recommendation part).

** an inconsistency appeared in the self-assessment of implementation of the 3EPR recommendations 4.1 (b) concerning “Ensuring stable and adequate funding of forest and biodiversity monitoring activities” (assessed as not implemented) and 11.1 (b) concerning mobilizing “adequate financial resources to ensure the continuation of state programmes related to biodiversity monitoring and research in the long run” (assessed as “partially implemented”). In the latter case comments by North Macedonia explicitly indicate that capacities are still insufficient, the state financial support for monitoring is missing, and no separate budget line for funding monitoring exists, while a major part of funds for biodiversity monitoring comes from external sources. Hence, financial resources in question are not yet “adequate”, and therefore the rating has been re-assessed, to read as “not implemented”.

The above table indicates that North Macedonia was most successful in implementing the 1EPR biodiversity-related recommendations, while the progress with 2EPR and 3EPR recommendations is rather slow, and the country still faces numerous challenges, related to different fields of expected ‘country response’. Hence, the performance should further be monitored, and assessed under the fourth EPR cycle.

**Romania**
* ongoing

The ongoing 3EPR of Romania will provide the most update assessment of the state of implementation of 2EPR recommendations, while the below ratings concerning 2EPR derive from its draft version (indicating visible progress in all cases).

Although 3EPR did not re-assess the progress in the implementation of 1EPR recommendations, the table below indicates their current status, basing solely on the draft 3EPR contents (Romania has not yet submitted its 6CBD NR, therefore such source remains unavailable for updating the assessment of the state of implementation of 1EPR recommendations). As the 3EPR is still ongoing, the redundant “2020” column has been marked as “not applicable” in the table below, but kept for technical purposes, in order to ensure the editorial compatibility with tables concerning other countries, necessary for the next sub-section.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Thematic heading</th>
<th>Main subject</th>
<th>Rate of implementation</th>
<th>Comments</th>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>2EPR</td>
<td>3EPR</td>
<td>2020</td>
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<td>ROU 1</td>
<td>2.4</td>
<td>coordination</td>
<td>spatial planning vs. environment / PA land use</td>
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<td>MDP ceased exist</td>
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<tr>
<td>ROU 1</td>
<td>9.1</td>
<td>capacity</td>
<td>human res &amp; training for biodiversity conservation / monitor</td>
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<td>ROU 1</td>
<td>9.2</td>
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<td>national biodiversity monitoring system</td>
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<td></td>
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<tr>
<td>ROU 1</td>
<td>9.3</td>
<td>information</td>
<td>national info exchange network / CHM</td>
<td>n/a</td>
<td></td>
<td>no CHM **</td>
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<tr>
<td>ROU 1</td>
<td>9.4</td>
<td>ecosystems</td>
<td>afforestation degraded land / forest belts agriculture</td>
<td>n/a</td>
<td></td>
<td>problem? 5CBDNR</td>
</tr>
<tr>
<td>ROU 1</td>
<td>9.5</td>
<td>PA / econet</td>
<td>est. PA network to cover 10 per cent country</td>
<td>n/a</td>
<td></td>
<td>SAC designation?</td>
</tr>
<tr>
<td>ROU 1</td>
<td>9.6</td>
<td>ecosystems</td>
<td>protect biodiversity in agro-ecosystems</td>
<td>n/a</td>
<td></td>
<td>EU CAP</td>
</tr>
<tr>
<td>ROU 1</td>
<td>9.7</td>
<td>coordination</td>
<td>cooperate w. NGOs &amp; local communities</td>
<td>n/a</td>
<td></td>
<td></td>
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<tr>
<td>ROU 1</td>
<td>11.5</td>
<td>pressures</td>
<td>impact of afforestation/rehab projects on biodiversity</td>
<td>n/a</td>
<td></td>
<td>EIA guide</td>
</tr>
<tr>
<td>ROU 1</td>
<td>11.7</td>
<td>pressures</td>
<td>regulate use of grasslands (steep hills)</td>
<td>n/a</td>
<td></td>
<td>2000NAPCD impl?</td>
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<tr>
<td>ROU 2</td>
<td>9.1</td>
<td>regulatory</td>
<td>compensations for private forest landowners</td>
<td>n/a</td>
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<td>not yet paid</td>
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<tr>
<td>ROU 2</td>
<td>9.2 (a)</td>
<td>regulatory</td>
<td>improve law enforcement in PAs</td>
<td>n/a</td>
<td></td>
<td>n/a insuff. capacities</td>
</tr>
<tr>
<td>ROU 2</td>
<td>9.2 (b)</td>
<td>capacity</td>
<td>training env. guards, control poaching in PAs</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>ROU 2</td>
<td>9.3 (a)</td>
<td>capacity</td>
<td>for develop. PA mgmt plans for all PAs</td>
<td>n/a</td>
<td></td>
<td>slow progress</td>
</tr>
</tbody>
</table>
According to the draft 3EPR, 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. However, the amendment of 2013 (Law No. 190/2013 regarding the approval of the GEO No. 7/2011), although prescribes taking into account the possible risk of breach of environmental protection norms when issuing a building permit, it simultaneously deleted the original provision prohibiting the building of objects which violate nature protection. For this reason, implementation of 1EPR Recommendation 2.4 has been assessed above as 'not implemented'.

The above table indicates that some of 1EPR biodiversity-related recommendations remain still valid for Romania.

Serbia
* Serbia became an independent country in 2006, previously covered by the 1st EPR of Yugoslavia (together with Montenegro, in result the first 10 of 11 1EPR Recommendations mentioned below were the same as for Montenegro, although addressed to different authorities).

The above table indicates that although Serbia already succeeded in the implementation of several 1EPR and 2EPR recommendations, little information is available to assess the progress with the remaining ones (also due to the fact that neither the 2EPR nor 3EPR of Serbia contained a separate chapter on biodiversity and PAs, in result the biodiversity-related issues have been last assessed under 1EPR of Yugoslavia in 2002, almost two decades ago).

** as of April 2021, the Clearinghouse Mechanism for the Rio Conventions implementation in Romania was not yet operational.

---

303 https://biodiversitate.mmediu.ro/rio/conventions
**Tajikistan**  

Although Tajikistan did not inform in 2020 on any results of its self-assessment of the implementation of the 3EPR recommendations of 2017, some relevant information was present in its 6CBD NR (submitted in August 2019).

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Thematic heading</th>
<th>Main subject</th>
<th>Rate of implementation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>TJK</td>
<td>1</td>
<td>9.1</td>
<td>forestry</td>
<td>reforestation plan</td>
<td>new Programme?</td>
<td></td>
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<tr>
<td>TJK</td>
<td>1</td>
<td>9.2</td>
<td>monitoring</td>
<td>revise Red Data Book implem. IUCN criteria</td>
<td>6CBD NR</td>
<td></td>
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<tr>
<td>TJK</td>
<td>1</td>
<td>9.2</td>
<td>policy</td>
<td>species and habitats conservation programs</td>
<td>6CBD NR</td>
<td></td>
</tr>
<tr>
<td>TJK</td>
<td>1</td>
<td>9.3</td>
<td>MEA</td>
<td>accede CITES</td>
<td>6CBD NR</td>
<td></td>
</tr>
<tr>
<td>TJK</td>
<td>1</td>
<td>9.4</td>
<td>PA / econet</td>
<td>extend PA netw &amp; establish micro-reserves</td>
<td>PA decreased</td>
<td></td>
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<tr>
<td>TJK</td>
<td>1</td>
<td>9.5</td>
<td>information</td>
<td>publish species data used for setting quotas</td>
<td></td>
<td></td>
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<tr>
<td>TJK</td>
<td>2</td>
<td>9.1</td>
<td>legal/policy/institutional/capacity/fund/regul</td>
<td>n/a</td>
<td>2011 Forest Code</td>
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<td>TJK</td>
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<td>9.2</td>
<td>monitoring</td>
<td>participatory monitoring for biodiv. &amp; forest</td>
<td>n/a</td>
<td></td>
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<tr>
<td>TJK</td>
<td>2</td>
<td>9.3</td>
<td>PA / econet</td>
<td>PA mgmt &amp; monitor &quot;in a coordinated way&quot;</td>
<td>slow progress</td>
<td></td>
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<tr>
<td>TJK</td>
<td>2</td>
<td>9.3</td>
<td>PA / econet</td>
<td>develop &amp; implement PA mgmt plans all PA</td>
<td>on project basis</td>
<td></td>
</tr>
<tr>
<td>TJK</td>
<td>2</td>
<td>9.4</td>
<td>capacity</td>
<td>capacity build for PA mgmt plan implement?</td>
<td>draft Str&amp;AP fund?</td>
<td></td>
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<tr>
<td>TJK</td>
<td>2</td>
<td>9.5</td>
<td>forestry</td>
<td>conserve mountain ecosystems</td>
<td>limited capacities</td>
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<tr>
<td>TJK</td>
<td>3</td>
<td>1.5</td>
<td>institutional</td>
<td>PA competencies to Comm. on Env. Protect.</td>
<td>n/a</td>
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<tr>
<td>TJK</td>
<td>3</td>
<td>8.1</td>
<td>monitoring</td>
<td>biodiversity forest&amp;non-for. ecosystems</td>
<td>6CBD NR</td>
<td></td>
</tr>
<tr>
<td>TJK</td>
<td>3</td>
<td>8.1</td>
<td>monitoring</td>
<td>biodiversity and forest monitoring system</td>
<td>only in PAs</td>
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<tr>
<td>TJK</td>
<td>3</td>
<td>8.1</td>
<td>monitoring</td>
<td>information system / databases</td>
<td>6CBD NR</td>
<td></td>
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<tr>
<td>TJK</td>
<td>3</td>
<td>8.2</td>
<td>species /PA design. small reserves (threatened plant spec)</td>
<td>n/a</td>
<td>n/a</td>
<td>6CBD NR</td>
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<td>TJK</td>
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<td>8.2</td>
<td>regulatory</td>
<td>compens/incentives private/commun. reserves</td>
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<td>n/a</td>
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<td>8.2</td>
<td>species</td>
<td>Red Book species hunting quota census-based</td>
<td>6CBD NR</td>
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<td>8.3</td>
<td>forestry</td>
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<td>n/a</td>
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<td>8.3</td>
<td>pressures</td>
<td>limit grazing in forest/enhance nat. regenerat.</td>
<td>6CBD NR</td>
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<tr>
<td>TJK</td>
<td>3</td>
<td>8.3</td>
<td>pressures</td>
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<td>n/a</td>
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<td>8.4</td>
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<td>6CBD NR</td>
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<td>3</td>
<td>8.5</td>
<td>policy</td>
<td>integrate nat.capital &amp; ecosyst.mgmt planning</td>
<td>6CBD NR</td>
<td></td>
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<tr>
<td>TJK</td>
<td>3</td>
<td>8.6</td>
<td>capacity</td>
<td>additional staff recruitment &amp; training</td>
<td>n/a</td>
<td>n/a</td>
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</tbody>
</table>

* Recommendation 9.1 of 2EPR of Tajikistan was not enough precise and far too complex: "The Committee on Environmental Protection should improve the policy, legal and institutional basis as well as increase human and financial capacity for the joint management of forest and other natural resources, and encourage the establishment of positive economic incentives and long-term user rights for sustainable natural resource use among traditional resource users".
** Recommendation 9.3 of 2EPR of Tajikistan was not enough precise: “The Government should: (a) Develop the management and monitoring of all types of protected areas in a coordinated way”.

The above table indicates that Tajikistan is, to say the least, still far from the successful implementation of EPR recommendations (regardless of which EPR cycle), while little information is available to assess its progress.

**Uzbekistan**


As the 6CBD NR of Uzbekistan was submitted in 2018 (thus prior to its 3EPR), the additional information resulting from the 2020 self-assessment of the rate of implementation of the 3EPR recommendations provided to the ECE EPR team by Uzbekistan was the only available source. However, in several cases, the comparison of the contents of the 3EPR recommendation with country explanations (justifying the positive result of the self-assessment) resulted in different final rating than self-assigned by Uzbekistan (which is further explained under the table).

<table>
<thead>
<tr>
<th>ISO code</th>
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<th>Comments</th>
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<td>UZB</td>
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<td>PA competencies to State Committee NatProt</td>
<td>2EPR</td>
<td>3EPR</td>
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<td>PA / econet</td>
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<td>monitoring</td>
<td>biodiv. monitoring system</td>
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<td>UZB</td>
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<td>policy</td>
<td>integrated national wetland conserv. plan</td>
<td>see 3/11.2 (b)</td>
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<td>UZB</td>
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<td>capacity</td>
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<td>UZB</td>
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<td>policy</td>
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<td>7.3 (b)</td>
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<tr>
<td>UZB</td>
<td>3</td>
<td>7.5 (a)</td>
<td>ecosystems</td>
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<td>n/a</td>
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<td>3</td>
<td>7.5 (b)</td>
<td>pressures</td>
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<td>n/a</td>
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<tr>
<td>UZB</td>
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<td>7.5 (c)</td>
<td>ecosystems</td>
<td>diversify species planted in Aral Sea region</td>
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<tr>
<td>UZB</td>
<td>3</td>
<td>11.1 (a)</td>
<td>policy/mon.</td>
<td>adopt revised Red List / publish Red Book</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>UZB</td>
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<td>11.1 (b)</td>
<td>policy/mon.</td>
<td>adopt list priority biodiv. monitoring research</td>
<td>2016 Resolution</td>
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<td>3</td>
<td>11.1 (c)</td>
<td>monitoring</td>
<td>long-term state biodiv. monitoring &amp; research</td>
<td>implement?</td>
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<tr>
<td>UZB</td>
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<td>11.1 (d)</td>
<td>funding</td>
<td>for biodiv. monitoring &amp; research</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.1 (e)</td>
<td>funding</td>
<td>for NFI &amp; research</td>
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<td>n/a</td>
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<tr>
<td>UZB</td>
<td>3</td>
<td>11.1 (f)</td>
<td>information</td>
<td>biodiv. information system</td>
<td>2023 implement?</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.2 (a)</td>
<td>policy</td>
<td>2019 NBSAP implementation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.2 (b)</td>
<td>policy</td>
<td>adopt nat. wetland policy / conserv. program</td>
<td>no policy / program</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.2 (c)</td>
<td>policy</td>
<td>adopt and implement ecosyst. &amp; species APs</td>
<td>see comment below</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.2 (d)</td>
<td>funding</td>
<td>for implementation of biodiv-related policies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

216
3EPR Recommendation 11.1 (a) concerned both the adoption of a revised and updated Red List of rare and endangered flora, fungi and fauna species, and the publication of the next edition of the Red Book. Uzbekistan self-assessed the rate of its implementation as “implemented” (although in the “in progress / ongoing” column of the self-assessment table) and justified the above positive rating by publishing the revised Red Books in 2019. However, no information on the adoption of revised Red List/s or the ongoing procedures leading to such formal decision was provided, hence the rating assigned in the table above is “partially implemented”. Due to the above, the adoption of a revised Red List, indicating species granted legal protection, should possibly be verified under the fourth EPR cycle.

3EPR Recommendation 11.1 (b) concerned the adoption of a list of priority biodiversity monitoring and research programme topics. Uzbekistan self-assessed the rate of its implementation as “implemented” (although in the “in progress / ongoing” column of the self-assessment table) and justified the above positive rating by referring to the 2016 Resolution of the Cabinet of Ministers, approving the environmental monitoring program in the Republic of Uzbekistan for 2016 – 2020. However, the adoption of a Resolution in 2016 cannot mean the implementation of a recommendation addressed in 2020. Simultaneously, the “no response” rating would not be appropriate, as the ECE team did receive a response. Due to the above, the rating assigned in the table above is “not implemented”. The presence of such priority list should possibly be verified under the fourth EPR cycle.

3EPR Recommendation 11.2 (b) concerned the adoption of the national wetland policy and corresponding programme for wetlands conservation. Uzbekistan self-assessed the rate of its implementation as “partially implemented”, referred to several planned activities, but explicitly stated “To date, there is no national strategy focused solely on the conservation of wetlands”. Due to the above, the rating assigned in the table above is “not implemented”. Therefore, the development, formal adoption, and implementation of a special policy and resulting programme for wetlands conservation should possibly be verified and assessed under the fourth EPR cycle.

3EPR Recommendation 11.2 (c) concerned the adoption and ensuring the implementation of ecosystem and species action plans and programmes. Uzbekistan self-assessed the rate of its implementation as “partially implemented” and referred to currently drafted Program for the Conservation of the Snow Leopard and Its Habitats, which therefore resulted in “in progress / ongoing” rating assigned in the table above. Uzbekistan also referred to a draft resolution “On approval of the Program for the creation and expansion of the system of protected natural areas in the Republic of Uzbekistan until 2028”, which cannot be perceived as an ecosystem or species action programme. Development, formal adoption, and implementation of other species- and ecosystem-focused action plans and programmes should possibly be verified and assessed under the fourth EPR cycle.

3EPR Recommendation 11.3 (a), addressed to the country in 2020, concerned amending the 2004 Law on Protected Natural Territories, so as to incorporate the concepts of the ecological network and ecological corridors. Uzbekistan explained that the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated 04.05.2018 No. 339 contains references to the ecological network as a system of protected natural areas and noted that the revision of the above 2004 Law is planned for 2021. However, Uzbekistan did not explicitly inform that the planned amendment of the 2004 Law will consider the recommended issues. Hence, the rating “partially implemented” (self-assigned by Uzbekistan) has been changed into “in progress / ongoing”.

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304 На сегодняшний день нет национальной стратегии, направленной только на сохранение водно-болотных угодий.
progress / ongoing”, while the inclusion of the recommended provisions should possibly be verified under the fourth EPR cycle.

2.1.2. Implementation of EPR recommendations by themes

The following table demonstrates the thematic breakdown of EPR recommendations related to biodiversity and PAs, addressed to the Governments of the 3EPR countries since their first EPR (hence, not yet taking into account the draft recommendations of the ongoing EPRs of Morocco and Romania). Recommendations were grouped under 15 thematic headings (indicating the main subject of particular EPR recommendation), exactly the same as used in the previous part of this sub-section. One additional ‘general’ heading was necessary, to indicate few recommendations not precisely addressing any of the above thematic fields of expected ‘country response’.

<table>
<thead>
<tr>
<th>Thematic heading</th>
<th>1EPR</th>
<th>2EPR</th>
<th>3EPR</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>species</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ecosystem</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>forestry</td>
<td>7</td>
<td>5</td>
<td>13</td>
<td>25</td>
</tr>
<tr>
<td>pressures</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>monitoring</td>
<td>10</td>
<td>10</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>PA / econet</td>
<td>15</td>
<td>17</td>
<td>19</td>
<td>51</td>
</tr>
<tr>
<td>MEA</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>legal</td>
<td>16</td>
<td>6</td>
<td>13</td>
<td>35</td>
</tr>
<tr>
<td>policy</td>
<td>18</td>
<td>10</td>
<td>21</td>
<td>49</td>
</tr>
<tr>
<td>institutional</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>coordination</td>
<td>3</td>
<td>4</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>regulatory</td>
<td>1</td>
<td>6</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>capacity</td>
<td>6</td>
<td>12</td>
<td>16</td>
<td>34</td>
</tr>
<tr>
<td>funding</td>
<td>3</td>
<td>1</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>information</td>
<td>4</td>
<td>2</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>general</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>101</strong></td>
<td><strong>87</strong></td>
<td><strong>175</strong></td>
<td><strong>363</strong></td>
</tr>
</tbody>
</table>

The above numbers might slightly be misleading in case of ‘species’ and ‘ecosystem’ headings, as many other EPR recommendations consider both species and ecosystem conservation issues indirectly, e.g., by recommending the adoption and implementation of specially targeted policy documents (incl. strategies, action plans, national single species or ecosystem conservation programmes) which are indicated under ‘policy’ heading.

On the other hand, recommendations concerning improvements in the policy framework directly related to forestry management were indicated under the ‘forestry’ heading, and those directly related to PAs and ecological networks were indicated under the ‘PA / econet’ heading.

The above table indicates that almost a half (174 out of 363 total, hence 48 per cent) of all recommendations addressed to the Governments of the 3EPR countries since the beginning of the EPR process were included in the most recent 3EPR, which can mean that the last EPR cycle provided the most detailed and most precise recommendations.

Most often EPR recommendations addressed three thematic fields of expected ‘country response’: PAs and ecological networks (‘PA / econet’), monitoring, and policy framework, such accounted for 41.4 per cent of all recommendations formulated under all 3 EPR cycles. Recommendations concerning the necessary adjustments of the legal framework, and capacity building (mainly training for biodiversity conservation, PA and forest management, and monitoring, as well as the provision of necessary monitoring and field equipment) accounted for the further 19 per cent of all EPR recommendations. Hence, recommendations made under the above mentioned 5 thematic headings constituted 60.4 per cent of all recommendations formulated under the 3 previous EPR cycles.
The comparison of the three EPR cycles indicates also the visible increasing trend in the number of recommendations made under some ‘thematic headings’, e.g., concerning capacity building, biodiversity and forest monitoring, enhanced coordination between different institutions, application of regulatory measures, and increased funding.

Due to the number (363) of all recommendations analysed, only some selected examples sometimes accompany the tables below, in order to illustrate the progress (or the lack thereof) in particular thematic field of recommended ‘country response’.

Species

The above thematic heading groups solely recommended measures directly targeted at species conservation, while other headings such as ‘legal’ and ‘policy’ also contain species-related recommendations.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Main subject/s of recommendation</th>
<th>Rate of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2EPR</td>
</tr>
<tr>
<td>ALB</td>
<td>1</td>
<td>8.3</td>
<td>legal &amp; institute – medicinal &amp; aromatic plants</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>3</td>
<td>8.2</td>
<td>design. small reserves (threatened plant spec)</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3EPR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>TJK</td>
<td>3</td>
<td>8.2</td>
<td>Red Book spec. hunting quota census-based</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Small nature reserves aimed at the protection of rare and threatened plant species have not yet been designated in Tajikistan, while the Red Book species were still commercially hunted and collected (at least in 2016 and 2017). According to 6CBD NR “Funds from the use of Red Book species of plants and animals are spent on the preservation, reproduction and increase in the number of wild animals, and the expansion of the area of plants, primarily medicinal ones”, which seems to be an official justification of the practice authorized by the 2014 Law on Hunting and the Hunting Sector (despite that explicitly prohibited by the 2008 Law on Fauna and the 2011 Law on Environmental Protection). However, there is no evidence that the annual quotas set for the withdrawal of Red Book species from the environment are based on credible information deriving from their population census, such information remains publicly unavailable (see also ‘information’ heading).

Ecosystem

The above thematic heading relates solely to recommended measures directly targeted at ecosystem conservation (other than forest ecosystems), while other relevant headings include also e.g., ‘forestry’, ‘pressures’, ‘PA / econet’, ‘legal’ and ‘policy’.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Main subject/s of recommendation</th>
<th>Rate of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2EPR</td>
</tr>
<tr>
<td>BLR</td>
<td>1</td>
<td>-</td>
<td>conversion of marginal agricultural land</td>
<td>n/a</td>
</tr>
<tr>
<td>ROU</td>
<td>1</td>
<td>9.4</td>
<td>afforest. degraded land / forest belts agricult.</td>
<td>n/a</td>
</tr>
<tr>
<td>ROU</td>
<td>1</td>
<td>9.6</td>
<td>protect. biodiv in agro-ecosystems</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>2</td>
<td>9.5</td>
<td>conserve mountain ecosystems</td>
<td>n/a</td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>7.5</td>
<td>floodplain and riparian forest habitats</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3EPR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>7.5</td>
<td>diversify species planted in Aral Sea region</td>
<td>n/a</td>
</tr>
</tbody>
</table>

The table shows that Belarus and Romania successfully implemented ecosystem-related activities, recommended under their 1EPRs. In case of Tajikistan its progress towards the conservation of mountain ecosystems (recommended under its 2EPR) can hardly be assessed, as a considerable part of its mountain
regions is already under legal protection (incl. Tajik state nature park, alone encompassing over 18 per cent of the country’s territory), but its PA network has recently been decreasing (see relevant part of subsection 1.5).

**Forestry**

The above thematic heading groups different issues related to sustainable forest management.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Main subject/s of recommendation</th>
<th>Rate of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2EPR</td>
</tr>
<tr>
<td>ALB</td>
<td>1</td>
<td>8.4</td>
<td>reforestation &amp; forest protection</td>
<td>n/a</td>
</tr>
<tr>
<td>ALB</td>
<td>3</td>
<td>9.4</td>
<td>national forest certification</td>
<td>n/a</td>
</tr>
<tr>
<td>BLR</td>
<td>3</td>
<td>10.1</td>
<td>improve afforest. and harvesting patterns</td>
<td>n/a</td>
</tr>
<tr>
<td>BLR</td>
<td>3</td>
<td>10.2 (a)</td>
<td>consult forest law &amp; policy with stakeholders</td>
<td>n/a</td>
</tr>
<tr>
<td>BLR</td>
<td>3</td>
<td>10.2 (b)</td>
<td>cross-sectonal: biodiversity + climate change</td>
<td>n/a</td>
</tr>
<tr>
<td>BLR</td>
<td>3</td>
<td>10.2 (c)</td>
<td>monitor forest law &amp; policy implementation</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>1</td>
<td>8.2</td>
<td>nat. forestry strategy and action plans</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>9.5 (c)</td>
<td>entity forestry strategies</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>9.5 (c)</td>
<td>forest APs based on inventory and strategies</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>3</td>
<td>12.1 (c)</td>
<td>improve silviculture in private forests</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>3</td>
<td>12.2 (a)</td>
<td>adopt forestry strategy</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>1</td>
<td>8.3 (b)</td>
<td>forest strategy</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>2</td>
<td>9.1 (a)</td>
<td>forest strategy</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>2</td>
<td>9.1 (b)</td>
<td>forest programme</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>3</td>
<td>11.1 (b)</td>
<td>forest mgmt. plans</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>3</td>
<td>11.3</td>
<td>forest mgmt AP &amp; guidelines</td>
<td>n/a</td>
</tr>
<tr>
<td>KAZ</td>
<td>1</td>
<td>10.3</td>
<td>reserves/gene banks/forest protect./afforest.</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>1</td>
<td>6.6</td>
<td>forest AP, incl. afforestation</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>13.1 (a)</td>
<td>revise 2015 State Policy on Forests</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>13.1 (b)</td>
<td>dev. sustainable forestry criteria &amp; indicators</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>13.1 (c)</td>
<td>dev. national sust. forestry certification</td>
<td>n/a</td>
</tr>
<tr>
<td>SRB</td>
<td>1</td>
<td>9.5</td>
<td>develop &amp; implement sust. forestry strategy</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>1</td>
<td>9.1</td>
<td>reforestation plan</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>2</td>
<td>9.4</td>
<td>dev &amp; impl. natl. reforestation programme</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>3</td>
<td>8.3 (a)</td>
<td>accelerate afforestation/reforest. programme</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Georgia has successfully adopted its new Forest Code in 2020 and is currently working on the endorsement of Sustainable Forest Management Criteria and Indicators. In Serbia already 100 per cent of public forests were certified through the FSC. However, no reforestation plan has so far been implemented by Tajikistan, despite the repeated recommendations under all EPR cycles. The acceleration of the afforestation and reforestation measures is still vital for Tajikistan, also due to the fact that the annual demand for fuelwood exceeds the total timber standing stock of all forests in this country (3EPR).

**Pressures**

The above thematic heading relates to different recommended measures aimed at minimizing the adverse effects of pressures on biodiversity and ecosystems, most often the anthropogenic ones. However, in most cases not enough information was available to assess the rate of implementation of EPR recommendations.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Main subject/s of recommendation</th>
<th>Rate of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2EPR</td>
</tr>
<tr>
<td>BLR</td>
<td>1</td>
<td>..</td>
<td>nature tourism code of conduct in PAs</td>
<td>n/a</td>
</tr>
<tr>
<td>BLR</td>
<td>2</td>
<td>8.1</td>
<td>ecotourism certification scheme</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Monitoring

The above themed heading groups different issues related to monitoring, inventories, research, establishment and maintenance of databases and information systems on biodiversity and ecosystems (incl. forests). It is worth noting that recommendations concerning possible improvements in monitoring were addressed to the vast majority of the 3EPR countries (except for Belarus) and still remain a challenge to most countries.
A general practice is that biodiversity monitoring is more or less operational and effective only inside PAs, while the remaining (and always prevailing) non-protected part of the country’s territory either remains “terra incognita” in terms of researching the species occurrence, and monitoring trends in the size of species populations, or is researched occasionally and irregularly.

In result, the shortcomings of biodiversity monitoring common in most 3EPR countries constitute a critical bottleneck for the elaboration and adoption of sound and effective evidence-based conservation policies.

### PA / econet

The above thematic heading groups all EPR recommendations related to PA and ecological networks development and management (including the development and implementation of national strategies for the PA/ecological network/s further extension and improvement, but not the PA-related legal and institutional frameworks, analyzed separately). Such were also addressed to the vast majority of the 3EPR countries (except for Morocco).
<table>
<thead>
<tr>
<th>Country</th>
<th>Sub-section</th>
<th>Recommendation</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIH</td>
<td>2</td>
<td>AP for Natura 2000 preparation</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>entity level PA cadasters</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>3</td>
<td>small coastal PAs along Adriatic coastline</td>
<td>n/a</td>
</tr>
<tr>
<td>BGR</td>
<td>3</td>
<td>increase strict PA share / Aichi</td>
<td>n/a</td>
</tr>
<tr>
<td>BGR</td>
<td>3</td>
<td>N2000 management plans</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>1</td>
<td>PA strategy, PA mgmt. plans</td>
<td></td>
</tr>
<tr>
<td>GEO</td>
<td>2</td>
<td>PA strategy</td>
<td></td>
</tr>
<tr>
<td>GEO</td>
<td>3</td>
<td>PA network development</td>
<td>n/a</td>
</tr>
<tr>
<td>KAZ</td>
<td>3</td>
<td>extend PA network / representativeness</td>
<td>n/a</td>
</tr>
<tr>
<td>KAZ</td>
<td>3</td>
<td>raising legal protective status of “zakazniks”</td>
<td>n/a</td>
</tr>
<tr>
<td>KAZ</td>
<td>3</td>
<td>support local initiatives ecological corridors</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>1</td>
<td>excluding HNV lands from privatization</td>
<td></td>
</tr>
<tr>
<td>MDA</td>
<td>1</td>
<td>PA strategy/ transbound, connect / harmoniz.</td>
<td></td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>evaluate current PA zoning pattern</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>revise PA zoning &amp; modify PA mgmt plans</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>extend PA network / representativeness/mountain</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>extend PA network / representativeness</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>PA mgmt. plans develop/revision/implement</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>programme on PA network extension</td>
<td>n/a</td>
</tr>
<tr>
<td>MNE</td>
<td>1</td>
<td>develop &amp; implement NP mgmt plans</td>
<td></td>
</tr>
<tr>
<td>MNE</td>
<td>2</td>
<td>dev/implement PA mgmt plans for all PAs</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>1</td>
<td>develop PA mgmt plans + financing scheme</td>
<td></td>
</tr>
<tr>
<td>MKD</td>
<td>2</td>
<td>PA reevaluation / reproclamation</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>2</td>
<td>extend PA network ensure representativeness</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>2</td>
<td>adopt mgmt plans for all PAs</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>2</td>
<td>Emerald Network / Nat. Ecological Network</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>complete PA reevaluation / reproclamation</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>identify N2000 sites &amp; Nat.Ecolog.Net areas</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>extend PA network, increase representativeness</td>
<td>n/a</td>
</tr>
<tr>
<td>ROU</td>
<td>1</td>
<td>est. PA network to cover 10 per cent country</td>
<td>n/a</td>
</tr>
<tr>
<td>SRB</td>
<td>1</td>
<td>develop &amp; implement NP mgmt plans</td>
<td></td>
</tr>
<tr>
<td>TJK</td>
<td>1</td>
<td>extend PA netw &amp; establish micro-reserves</td>
<td></td>
</tr>
<tr>
<td>TJK</td>
<td>2</td>
<td>PA mgmt &amp; monitor “in a coordinated way”</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>2</td>
<td>develop &amp; implement PA mgmt plans all PA</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>3</td>
<td>design. small reserves (threatened plant spec)</td>
<td>n/a</td>
</tr>
<tr>
<td>UZB</td>
<td>1</td>
<td>long term plan for extension of PAs network</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>1</td>
<td>increase public participation in PA mgmt.</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>2</td>
<td>establish integrated PA network + monitoring</td>
<td>n/a</td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>designate external PA buffer zones</td>
<td>n/a</td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>extend PA network</td>
<td>n/a</td>
</tr>
</tbody>
</table>

The above table indicates that most 3EPR countries were quite successful in the implementation of PA-related recommendations, however the timely adoption and implementation of PA management plans and ensuring the ecological representativeness remain the most common challenges (see also conclusions of sub-section 1.5).

**MEA**

The above thematic heading relates to EPR recommendations concerning the accession to, establishing the necessary legal and institutional frameworks, and effective enforcement of MEAs.
No regularities or concatenations can be observed on the basis of the above table, which could imply that EPR recommendations could have limited influence on e.g., the MEA accession process in 3EPR countries, such were predominantly politically driven. However, related EPR recommendations could further mobilize for the fulfilment of international commitments and support the initiatives by the national focal points (NFPs) towards operationalizing the in-country institutional cooperation on MEA enforcement.

Legal

The above thematic heading groups issues related to recommended improvements of the legal framework.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Main subject/s of recommendation</th>
<th>Rate of implementation</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2EPR</td>
</tr>
<tr>
<td>ALB</td>
<td>1</td>
<td>8.2</td>
<td>develop legal act on biodiversity conservation</td>
<td>n/a</td>
</tr>
<tr>
<td>ALB</td>
<td>3</td>
<td>9.3</td>
<td>dev. legal act on HNV forests and NTFPs</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>1</td>
<td>8.3 (a)</td>
<td>by-laws for entity Laws on Nature Protection</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>1</td>
<td>8.3 (b)</td>
<td>by-laws for entity Laws on Forests</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>9.2 (a)</td>
<td>Red Data Book regulations</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>9.3 (c)</td>
<td>CITES related regulations</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>9.5 (a)</td>
<td>new law on forests</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>3</td>
<td>12.2 (a)</td>
<td>adopt “draft law” on forests</td>
<td>n/a</td>
</tr>
<tr>
<td>BGR</td>
<td>1</td>
<td>-</td>
<td>enactment of draft laws on PAs</td>
<td>n/a</td>
</tr>
<tr>
<td>BGR</td>
<td>1</td>
<td>-</td>
<td>CBD ratification and related legislation</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>1</td>
<td>8.2</td>
<td>harmonize biodiv. legislation</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>2</td>
<td>9.2</td>
<td>forest legislation</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>3</td>
<td>11.2</td>
<td>Forest Code &amp; harmonize subsidiary legisl.</td>
<td>n/a</td>
</tr>
<tr>
<td>KAZ</td>
<td>3</td>
<td>9.1</td>
<td>law on plant species and communities protect</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>1</td>
<td>6.4</td>
<td>1995 Law Prot. Riparian Zones enforcement</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>1</td>
<td>6.7</td>
<td>enforcement illegal logging poaching fishing</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>2</td>
<td>7.5</td>
<td>amend Forest Code MENR lead afforestation</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>3</td>
<td>9.2</td>
<td>prepare new Law on PAs</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>3</td>
<td>9.4 (b)</td>
<td>finalize draft Law on landscapes</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>11.6 (a)</td>
<td>1994 SPA Law revision</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>13.3 (a)</td>
<td>forest user groups status and legal rights</td>
<td>n/a</td>
</tr>
<tr>
<td>MNE</td>
<td>1</td>
<td>9.1</td>
<td>harmonize nat. protect. legislat. w. internat.</td>
<td>n/a</td>
</tr>
<tr>
<td>MNE</td>
<td>1</td>
<td>9.2 (a)</td>
<td>intersectoral law harmonization</td>
<td>n/a</td>
</tr>
<tr>
<td>MAR</td>
<td>3*</td>
<td>1.4</td>
<td>finalize/adopt/impl Law coastline protect.</td>
<td>n/a</td>
</tr>
<tr>
<td>MAR</td>
<td>3*</td>
<td>3.1</td>
<td>draft law on env. monitoring (incl. biodiv)</td>
<td>n/a</td>
</tr>
</tbody>
</table>
As visible in the above table, many 3EPR countries (e.g., Albania, Bulgaria, Georgia, Kazakhstan, Montenegro, North Macedonia) followed the EPR recommendations concerning the improvement of their biodiversity-related legal framework, while little progress can be observed in few other countries. However, even in the presence of complete and clear legislation, the effective law enforcement remains the most common bottleneck in many reviewed countries.

Policy

The above (quite capacious) thematic heading relates to recommended improvements of the policy framework, in terms of elaborating, drafting, adoption and implementation of different biodiversity conservation-related national strategic documents, either obligatorily required under MEAs, or prepared on the initiative of particular country. As previously explained, this heading includes recommendations referring to Red Lists of legally protected species, indicating the priorities for the species conservation policy (while the non-binding Red Books are perceived as an officially approved result of biodiversity monitoring and research). Furthermore, this heading includes also the national single species / ecosystem conservation action plans and programmes.
The above table indicates that not yet all 3EPR countries followed recommendations concerning the development and implementation of biodiversity-related policies, including the NBSAP required under the CBD, and national wetlands policy, or programme for wetlands conservation, required by the Ramsar Convention Strategic Plans for 2009–2015 and 2016–2024.

It should also be noted that the validity period of several NBSAPs expired in 2020 (in parallel with the expiration of the CBD Strategic Plan for Biodiversity 2011–2020), while the elaboration of the subsequent NBSAPs can currently be delayed due to postponed CBD COP15, resulting in the absence of the officially adopted CBD Post-2020 GBF. Hence, several countries which successfully adopted their NBSAPs before (in line with EPR recommendations) should evaluate the effectiveness of their previous strategies and action plans, modify their contents accordingly to the current global challenges and priorities, adopt and implement new NBSAPs.

**Institutional**

The above heading relates to recommended improvements of the institutional framework (as previously mentioned - the number of which is slightly decreasing under each next EPR cycle).
Less than one third of recommendations concerning institutional framework has successfully been implemented, while the assessment of the current status of implementation was not possible for more than a half of ‘institutional’ recommendations.

All those implemented concerned either clarifying or strengthening the competencies of existing bodies (institutions and state agencies), while some of those not yet implemented indicated the need for more ‘revolutionary’ changes in the existing institutional setup, e.g., the establishment of new bodies, or decreasing the extensive competencies of the Presidential administration (hence, such expectations were probably less realistic).

**Coordination**

This thematic heading is somehow a supplementary one to the heading concerning institutional framework (reflecting the position of such sub-section in the structure of a ‘standard’ chapter on biodiversity and PAs), and groups recommendations aimed at necessary improvements enhancing coordination between different state administration bodies and agencies, scientific institutions and other important stakeholders, between the authorities responsible for environmental and biodiversity issues at the central, regional and local administrative levels.

As previously mentioned, the number of such recommendations is constantly increasing in each next EPR cycle, the majority (10 out of 17) was addressed under 3EPRs. However, recommendations concerning enhanced institutional coordination were addressed to less than a half (7 out of 15) 3EPR countries, moreover almost a half of such recommendations (7 out of 17) concerned Bosnia and Herzegovina, being a federal country, where the inter-entity coordination is particularly vital and required. It should be noted that the assessment of the institutional coordination effectiveness is usually quite subjective and burdened with a large margin of possible error.
As visible in the above table, the implementation rate under this heading is rather low, and not enough information was available to assess the current status of 6 out of 17 coordination-related recommendations.

**Regulatory**

The above thematic heading relates to recommended regulatory, economic and fiscal measures’ improvements. Similarly to the previous ‘coordination’ heading, the number of recommendations concerning regulatory measures increased with each next EPR cycle (from 1 addressed under 1EPR to already 11 under 3EPR).

The above table indicates that Bulgaria and Mongolia are already progressing towards the implementation of their 3EPR recommendations listed under ‘regulatory’ heading, Romania has already adopted the compensation system for private forest owners which could be affected by PA-related limitations (although no such compensations had been paid so far). However, the information allowing to assess the progress was not available in case of 50 per cent (9 out of 18) of ‘regulatory’ recommendations.
Capacity

The above heading groups recommendations related to capacity building measures, including technical assistance, staff training, supplementation of monitoring and field equipment etc. Their number constantly grows, with each next EPR cycle.

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Main subject/s of recommendation</th>
<th>Rate of implementation</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2EPR</td>
</tr>
<tr>
<td>ALB</td>
<td>2</td>
<td>8.1</td>
<td>forest techn. expertise for local govern. units</td>
<td>n/a</td>
</tr>
<tr>
<td>ALB</td>
<td>2</td>
<td>8.2</td>
<td>training and technical expertise – forest users</td>
<td>n/a</td>
</tr>
<tr>
<td>ALB</td>
<td>3</td>
<td>9.2 (a)</td>
<td>forestry; assistance for local govern. units</td>
<td>n/a</td>
</tr>
<tr>
<td>ALB</td>
<td>3</td>
<td>9.2 (b)</td>
<td>capacity build. for local govern. units</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>9.5 (c)</td>
<td>training and capacity building</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>2</td>
<td>9.5 (d)</td>
<td>guidance of European and global forest appr.</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>3</td>
<td>11.2 (b)</td>
<td>RS: strengthen Institute ProtCHNAtHeritage</td>
<td>n/a</td>
</tr>
<tr>
<td>BIH</td>
<td>3</td>
<td>12.1 (b)</td>
<td>advisory/financ support private forest owners</td>
<td>n/a</td>
</tr>
<tr>
<td>BGR</td>
<td>1</td>
<td>-</td>
<td>strengthen institutional capacity</td>
<td>n/a</td>
</tr>
<tr>
<td>BGR</td>
<td>1</td>
<td>-</td>
<td>technical capacity for PA mgmt</td>
<td>n/a</td>
</tr>
<tr>
<td>BGR</td>
<td>3</td>
<td>9.2 (a)</td>
<td>PA admin/finance/info capacity building</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>2</td>
<td>9.3</td>
<td>Forest Dept / forest guard equipm &amp; training</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>3</td>
<td>11.5 (a)</td>
<td>forest personnel educat.&amp;prof. requirements</td>
<td>n/a</td>
</tr>
<tr>
<td>GEO</td>
<td>3</td>
<td>11.5 (b)</td>
<td>forest mgmt univ. educational programmes</td>
<td>n/a</td>
</tr>
<tr>
<td>MDA</td>
<td>2</td>
<td>7.3</td>
<td>national GIS / land cadastre</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>11.3 (d)</td>
<td>spatial planning tools for PA netw. extension</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>11.4 (a)</td>
<td>human and technical capacity for MET</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>11.4 (b)</td>
<td>monitoring &amp; outdoor equipment, vehicles</td>
<td>n/a</td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>13.2 (a)</td>
<td>equipment &amp;training intersoum forest units</td>
<td>n/a</td>
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<tr>
<td>MNE</td>
<td>1</td>
<td>3.3 (b)</td>
<td>training for monitoring staff</td>
<td>n/a</td>
</tr>
<tr>
<td>MNE</td>
<td>2</td>
<td>3.1</td>
<td>MTE capacity for int.coop/MEAs/EU access</td>
<td>n/a</td>
</tr>
<tr>
<td>MAR</td>
<td>3*</td>
<td>9.2 (b)</td>
<td>financing/investment &amp; training</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>2</td>
<td>9.1</td>
<td>land cadaster (→PA reproclam/mgmt plans)</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>4.1 (a)</td>
<td>modern monitoring equipment</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>4.1 (c)</td>
<td>training: monitoring &amp; information</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>11.5 (d)</td>
<td>regular training biodiv/nature conserv.</td>
<td>n/a</td>
</tr>
<tr>
<td>ROU</td>
<td>1</td>
<td>9.1</td>
<td>human res &amp; training biodiv cons/monitor</td>
<td>n/a</td>
</tr>
<tr>
<td>ROU</td>
<td>2</td>
<td>9.2 (b)</td>
<td>training env. guards, control poaching in PAs</td>
<td>n/a</td>
</tr>
<tr>
<td>ROU</td>
<td>2</td>
<td>9.3 (a)</td>
<td>for devel. PA mgmt plans for all PAs</td>
<td>n/a</td>
</tr>
<tr>
<td>ROU</td>
<td>2</td>
<td>9.3 (b)</td>
<td>for PAs to access EU funding for PA mgmt</td>
<td>n/a</td>
</tr>
<tr>
<td>SRB</td>
<td>1</td>
<td>3.3 (b)</td>
<td>training for monitoring staff</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>2</td>
<td>9.3 (c)</td>
<td>capacity build for PA mgmt plan implement?</td>
<td>n/a</td>
</tr>
<tr>
<td>TJK</td>
<td>3</td>
<td>8.6</td>
<td>additional staff recruitment &amp; training</td>
<td>n/a</td>
</tr>
<tr>
<td>UZB</td>
<td>1</td>
<td>8.7</td>
<td>strength Forestry Dept.</td>
<td>n/a</td>
</tr>
</tbody>
</table>

As visible in the above table, the full implementation rate is surprisingly low, despite that capacity building measures are not particularly costly and challenging, especially when compared to other activities usually recommended under EPR chapters on biodiversity and PAs (like costly monitoring and research or large-scale afforestation programmes), while the capacity is decisive for the operationality and efficiency of each organization, regardless whether of the central level administrative bodies or of the field ranger and law
enforcement services. The ‘not-yet-implemented’ recommendations outnumber those successfully implemented, or “in progress”. The unavailability of information made the assessment of the current status impossible for a half of such recommendations, including also those addressed to the countries long ago (under their 1EPRs and 2EPRs).

Funding

The above thematic heading groups recommendations related to financing and mobilizing additional resources for biodiversity conservation-related investments (in line with SDG Targets 15.a and 15.b). It should be emphasized that such recommendations were quite rare under 1EPR and 2EPR, probably perceived as “too offensive to be openly addressed to the Governments”, by explicitly referring to missing or insufficient state funding, common in times when biodiversity conservation issues were not positioned high on the policy priority list, confronted with many other issues, traditionally perceived as more urgent priorities.

However, the above-described approach significantly changed under the third EPR cycle, when recommendations concerning funding appeared in 3EPRs of as many as 7 countries, which clearly indicates the still growing need for increased funding. “Conservation without money is just a conversation” …

<table>
<thead>
<tr>
<th>ISO code</th>
<th>EPR No</th>
<th>Rec No</th>
<th>Main subject/s of recommendation</th>
<th>Rate of implementation</th>
</tr>
</thead>
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<td></td>
<td>2EPR</td>
<td>3EPR</td>
<td>2020</td>
<td></td>
</tr>
<tr>
<td>ALB</td>
<td>3</td>
<td>9.1 (b) increase fund for forests &amp; biodiv monitoring</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>BGR</td>
<td>1</td>
<td>-</td>
<td>increase financing for nature conservation</td>
<td>n/a</td>
</tr>
<tr>
<td>KAZ</td>
<td>1</td>
<td>10.5</td>
<td>funding/revision of biodiv APs/efficiency</td>
<td>n/a</td>
</tr>
<tr>
<td>KAZ</td>
<td>3</td>
<td>9.2 (e) mobilize funds for biodiv monitor/research</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>11.4 (c) salaries attract. profession /young scientists</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>MNG</td>
<td>3*</td>
<td>13.6 (b) increase funding for effective forest mgmt.</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>MNE</td>
<td>3</td>
<td>5.2</td>
<td>ensure fund. for commitments on MDG7</td>
<td>n/a n/a</td>
</tr>
<tr>
<td>MAR</td>
<td>3*</td>
<td>9.2 (b) financing/investment &amp; training</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>MKD</td>
<td>2</td>
<td>9.5</td>
<td>state budget for PAs (acc. 2004 LawNatProt)</td>
<td>n/a</td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>4.1 (b) funding forest &amp; biodiversity monitoring</td>
<td>n/a n/a</td>
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</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>11.1 (b) fund biodiv monitoring and research</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>MKD</td>
<td>3</td>
<td>11.3 (c) for wetlands, ecosystems &amp; species conserv</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>1</td>
<td>8.4</td>
<td>implementation of NBSAP</td>
<td>n/a</td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.1 (d) for biodiv. monitoring &amp; research</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.1 (e) for NFI &amp; research</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.2 (d) for implementation of biodiv-related policies</td>
<td>n/a n/a</td>
<td></td>
</tr>
<tr>
<td>UZB</td>
<td>3</td>
<td>11.3 (d) national ecological network functioning</td>
<td>n/a n/a</td>
<td></td>
</tr>
</tbody>
</table>

The implementation rate of funding related EPR recommendations is generally low. The above table shows that either the funding for biodiversity conservation remains insufficient in several countries (e.g., in North Macedonia) or there is no clear evidence that funding related EPR recommendations had successfully been implemented. Even the analysis of the recently submitted VNRS of the achievement of the UN 2030 Agenda for Sustainable Development will not bring much additional information here and allow for a different assessment, also due to the fact that several countries to which such funding-related EPR recommendations had been addressed did not refer in their VNRS to funding-related SDG Targets (see relevant parts of the following sub-section 2.2, concerning SDG Targets 15.a and 15.b).

Information

The above thematic heading relates to recommended information and awareness raising measures.
A notable progress is visible in case of e.g., Bulgaria, where information-related recommendations had repeatedly been addressed under each EPR cycle. In most cases the most challenging task was the development and maintenance of the national biodiversity information system, allowing for effective data exchange between relevant agencies and institutions, and for disseminating the general information on the state of biodiversity to the general public. For example, the CHM is, as of early 2021, not yet operational in Romania. The above can often partly be explained by the absence of operational biodiversity monitoring systems. However, the non-compliance with the 1EPR recommendation concerning making the data on the size of fish and game stocks publicly available undermines the credibility and transparency of the procedure towards establishing reasonable quotas for hunting and fishing (which unfortunately concerns also commercially collected or hunted rare and threatened Red Book species).

In order to maintain the compatibility with the previous sub-section, also the 3 ‘non-categorized’ recommendations should be mentioned here. Their complicated and quite general formulation (marked with asterisks and quoted in relevant parts of the previous section) did not allow to include such under any above thematic heading.

As visible in the above table, the rate of implementation of such general recommendations, due to their complexity, cannot probably be evaluated differently than either “partially implemented” or “in progress / ongoing”.

### 2.2. Achievement of related SDG targets

This sub-section of the assessment analyses the achievement of SDG Targets related to biodiversity and PAs (following A/RES/71/313, E/CN.3/2018/2, E/CN.3/2019/2, and E/CN.3/2020/2), on the basis of the 3EPR reports (since 2017 most 3EPRs contained special SDG-related boxes), the VNRs of the achievement of the UN 2030 Agenda for Sustainable Development, as well as additional information provided by countries in late 2020 to the ECE EPR team, including their most recent CBD National Reports (only if explicitly indicated by particular country), and other reports indicated by countries (e.g., FAO Global Forest Resources Assessment, the Biodiversity Finance Initiative reports, country statistical reports).

The moment of evaluating the progress in the achievement of SDG Targets seems to be proper, taking into account that a vast majority of these SDG targets were expected to be reached by 2020.

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Since 2017, each chapter in Part “Media and Pollution Management” of the EPR report (except for the recently conducted 2020 EPR of Romania) contained a special SDG-related box under the ‘Policy framework’ section, where the current status of the country vis-à-vis Sustainable Development Goals (further SDGs) and targets relevant to the particular chapter should be described. For the conciseness reasons, these boxes were expected to briefly summarize the country’s progress towards reaching the globally adopted set of indicators, accompanying each SDG Target. The above does not exclude the possibility to refer to the SDGs and related Targets in the other (more descriptive) sections of each EPR chapter, in particular in its conclusions and recommendations.

Moreover, due to the fact that only 6 out of 15 assessed 3EPRs (of Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, and Uzbekistan) included such SDG-related boxes (while in the 3EPR of Romania relevant information was provided directly in the text of particular chapters), the 3EPR-based analysis has been supplemented by the review of the VNRs, successfully submitted by all 15 countries (in 2016 by Montenegro, in 2017 by Belarus and Tajikistan, in 2018 by Albania and Romania, in 2019 by Bosnia and Herzegovina, Kazakhstan, Mongolia and Serbia, and most recently in 2020 by Bulgaria, Georgia, Republic of Moldova, Morocco, North Macedonia, and Uzbekistan).

Therefore, in almost all cases (except for Romania, its 3EPR has not yet been completed) these VNRs could contain much more update information than available at the time of the 3EPRs of all countries concerned.

However, very few of the VNRs duly considered all biodiversity-related SDG targets.

For example, in the case of Montenegro, despite that its 2016 VNR stated that 167 out of 169 individual SDG Targets have been translated into measures defined in the Action Plan for the implementation of the National Strategy for Sustainable Development (NSSD) and indicated that all Targets in focus of this assessment were among the NSSD priority areas, the VNR in fact provided no information on the achievement of any of these targets.

Similarly, the VNR of Tajikistan indicated that some 64 per cent of SDG Targets were covered by the two national strategic documents, while the review of 10 national strategies justified the statement that the mainstreaming of SDGs in these documents accounts for as much as 78 per cent. However, the VNR of Tajikistan contained in fact no information on the achievement of biodiversity-related SDGs and resulting Targets (moreover, the contents of VNR Chapter 4. “Achievements” is very much a “one long story”, not particularly structured in accordance with the SDG sequence, where references to different SDGs were freely mixed).

The currently available VNR of Uzbekistan is only a 15-slide long PowerPoint presentation, thus containing limited information (However, including biodiversity-related SDGs and resulting Targets).

However, a very specific case (and also an alarming message) should be here the 2019 VNR by Serbia, beginning from the illustration on its cover page, and later also a textual reference to “Ramonda serbica – The Symbol of Sustainable Development of Serbia” (VNR), strictly protected in Serbia, and included into the IUCN Red List, followed by a statement (on the same page) that “plants are the base of life on Earth”, and by a strong declaration (VNR) that: “It would be hard to single out the most important one among the SDGs related to environmental protection, but for Serbia, it would be the preservation of biodiversity, as an obligation towards the present, and even more towards future generations”. Surprisingly, in conflict with the above declaration, it was basically all what the VNR could tell on the achievement of all biodiversity-related SDGs and resulting Targets (except for providing values of just two indicators in the statistical Annex 1 to the VNR). What should be even more alerting, Annex 2 “UNICEF Key messages of youth / Recommendations from young people” attached to the VNR by Serbia did not mention SDG Target 15 at all, which could imply that biodiversity conservation issues are not particularly important for the younger generations of Serbian citizens.
In order to ensure that this assessment reflects, to the extent possible, an accurate current situation (as of late 2020) 14 3EPR countries (except for Romania, its 3EPR has not yet been finalized) were invited in mid-July 2020 to carry out voluntary self-assessment of the progress achieved so far towards the achievement of biodiversity-related SDGs, which would then allow to update information available in VNRs (some dating back to 2016 and 2017).

Such specific additional information concerning SDGs was provided by Bulgaria and Georgia. Albania provided information on the achievement of selected CBD Aichi Targets, while Morocco provided summary assessment on the achievement of all Aichi Targets and its national targets of the 2016–2020 NBSAP (but without any detailed explanations). Furthermore, SDG-relevant information was sometimes provided in the self-assessments on the implementation of the 3EPR recommendations (by Bosnia and Herzegovina, Morocco, North Macedonia, and Uzbekistan). Moreover, Georgia, the Republic of Moldova and Serbia indicated their most recent 6th National Reports to the CBD (further 6CBD NRs), while Bulgaria and the Republic of Moldova indicated other reports.

In general, the most relevant indicators for biodiversity and PA management (those related to SDG15) were most often missing or seem to be neglected in national statistics and reports, except for SDG indicator 15.1.1 (Forest area as a proportion of total land area).

Therefore, the below comparison of the contents of the 3EPR “SDG-related boxes” (prepared by EPR experts, since 2017 obliged to do so, on the basis of their findings in biodiversity-related EPR chapters) and information provided in different EPR chapters with the contents of VNRs (where each country could freely decide on the selection of particular SDG Targets and indicators, and the way to describe the country progress towards their achievement) as well as any additional information made available by countries can provide an “added value”, helping to assess how are these biodiversity-related SDG Targets positioned among the priorities on the political agenda of a respective reviewed country.

Note [1]: several relevant SDG indicators have recently been modified, but in all sections below evaluating the SDGs achievement on the basis of the 3EPRs the indicators existing at the time of conducting the 3EPR review were considered.

Note [2]: several (below indicated) Aichi Targets of the CBD Strategic Plan for Biodiversity 2011–2020 correspond to some below assessed SDGs.

Methodological remarks

The achievement of SDG Targets (as well as e.g., Aichi Targets, or targets adopted under several MEAs) is usually assessed by analyzing a large number of different corresponding, globally adopted indicators.

However, first and foremost, the assessment of the progress recently made (or not) by a particular country towards the achievement of a particular target always requires the comparison of indicator values available for the review period, and/or the analysis of trend in the value of this indicator over the time.

Hence, providing (e.g., in an 3EPR SDG-related box) the value of particular indicator just for the year when the EPR had been carried out or completed (e.g., “96.5 per cent in 2019”) conveys no message on the change over the review period, and does not allow to assess the country’s progress (or the lack thereof).

Furthermore, a large majority of such globally adopted indicators require the thorough analysis of data resulting from permanent long-term biodiversity monitoring and scientific research and inventories carried out at the national (country) scale, while such data are often missing in 3EPR countries.
Later, in case the (more or less accurate and credible) data are available, the provision of the indicator value often requires complicated calculations and data aggregation.

In result, 3EPR countries often claim that data for the calculation of the value of particular indicator are not available, and simply avoid the trouble.

Despite the above reservations, if really deemed necessary, the values and trends in such globally adopted indicators for particular country are often available at the website\textsuperscript{308} of the Biodiversity Indicators Partnership (BIP) initiative, self-described as “responding to the indicator requests of the CBD and other biodiversity-related Conventions, for IPBES, for reporting on the Sustainable Development Goals, and for use by national and regional governments”.

However, in the opinion of the author of this assessment, such indicator values should rather be perceived only as rough estimates and interpreted by the EPR experts with extreme caution.

Last, but not least, numbers (values of particular indicator) are not enough to justify the progress (or the lack thereof) in biodiversity conservation, thus concise but sound explanations should always be provided.

**Target 2.5**

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.

Please note, that the SDG Target 2.5 corresponds with the Aichi Biodiversity Target 13 “By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity”.

- Indicator 2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities
- Indicator 2.5.2 Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction

**Methodological remarks**

In the opinion of the author of this assessment, SDG indicator 2.5.1 informs only whether a country has undertaken efforts towards the conservation of the genetic diversity of plants and animals, but can hardly demonstrate the progress made by a particular country, as long as the baseline value (the total number of cultivated plants, farmed and domesticated animals, and their related wild species occurring in a respective country) is not provided or known, and thus cannot be compared to the number of species, the genetic resources of which have successfully been secured in either medium- or long term conservation facilities. Moreover, if the previously reported indicator values are not available for comparison, the progress cannot be assessed.

**Coverage of Target 2.5 in 3EPR reports (since 2017)**

\textsuperscript{308} \textbf{www.bipindicators.net/}
The 3EPRs of Albania and Mongolia did not assess the achievement of Target 2.5, while relevant SDG-related boxes were present in 3 EPRs of Bosnia and Herzegovina, Kazakhstan, North Macedonia, and Uzbekistan. The 3EPR of Romania provided the most comprehensive description of country’s progress towards the achievement of Target 2.5. However, SDG indicator 2.5.1 has been provided solely for North Macedonia and Romania (in the latter only for plants), while the value of SDG indicator 2.5.2 has never been available, for different reasons.

**Target 2.5 achievement on the basis of the 3EPRs**

The 3EPR of **Albania** noted the presence of autochthonous six breeds of goats and six of sheep, which populations had been increasing, but no more information related to Target 2.5 has been provided.

The SDG-related box concerning **Bosnia and Herzegovina** mentioned only that the topic of genetic diversity conservation has been introduced to strategic documents, such as the Medium Term Agricultural Sector Strategy for the FBiH (2015–2019) and the Strategic Plan for Rural Development of RS (2016–2020), as well as the NBSAP 2015–2020, but no information was provided on the actual implementation of relevant measures for achieving Target 2.5.

**Kazakhstan** identified 45 local breeds, defined methodologies for the calculation of both SDG indicators, and the work on the identification of plant and animal species for the related threat categories was (reportedly) ongoing, however there were neither an organizational unit of the Ministry of Agriculture nor an expert appointed for this task. No other information relevant to the achievement of SDG Target 2.5 was available.

In **North Macedonia** the collection of 2,666 samples of 89 plant species (28 vegetable, 21 forage crop, 13 fruit crop, 11 medicinal and aromatic, 8 cereal, 5 leguminous and 3 industrial plant species), and the genetic material (in seed doses, embryos and egg cells) of the two native domestic animal species (Ovchepolska sheep and the local Balkan goat) have been secured since 2013 at the Gene Bank of the Institute of Agriculture. Hence, the value of SDG indicator 2.5.1 accounted for 91. The value of SDG indicator 2.5.2 was not available, due to the absence of data on the population of local breeds, including their risk status.

The draft 3EPR of **Romania** noted the fluctuating trend in the value of the SDG indicator 2.5.1 concerning plants, which initially increased by 8 per cent in 2010–2016, then decreased by 17 per cent in 2016–2018, and again increased in 2019 (however remained still below the estimated value for 2010).

The above fluctuations were not further explained in 3EPR Chapter 11. However, most probably Table 11.2 providing numbers of plant breeds for which sufficient genetic resources were stored between 2010 and 2019 refers not exactly to the number of plant breeds, rather the number of accessions (samples), as the “42,837” value for 2014 considerably exceeds the number (3,795) of all vascular plant species and subspecies occurring in Romania at that time. Consequently, the decline in numbers for e.g., 2016 and 2018 (8,030 less, according to Table 11.2) cannot mean that the genetic resources of over 8000 plant breeds were lost, most probably it refers to the number of samples terminated and removed from storage.

The values of SDG indicator 2.5.1 for animal breeds, and SDG indicator 2.5.2 were not available. Chapter 11 reported on the progress achieved through the implementation of the National Rural Development Programme 2014–2020, utilizing the agri-environmental measures (AEMs) developed under the EU Common Agricultural Policy (CAP), adequately motivating farmers by providing compensatory payments in order to maintain the local animal breeds in danger of abandonment, and provided detailed information on trends between 2015 and 2019 in populations of 16 local breeds of 5 species which were classified (accordingly to relevant EU Regulation) in 2008–2013 as endangered, where increase in population numbers could be observed for 6 local breeds, 4 other breeds had stable population trends, while the populations of 6 other local breeds decreased in Romania, despite AEMs applied.
In Uzbekistan the methodology has been defined for both SDG indicators, but the country nationalized SDG Target 2.5, so that the national indicator 2.5.1 (“The ex-situ/in situ diversity enrichment index”) significantly differs from the global one, while the national indicator 2.5.2 (“Number of local crops and breeds and their wild related species that are at risk of extinction”) seems to be a proper refinement of the global one (which does not include crop). However, within the 3EPR period, the Institute of the Gene Pool of Plants and Animals of the Academy of Sciences, which previously carried out scientific research on e.g., plant and animal genetics, and species populations was reorganized and in result ceased to exist. Due to the above, no information concerning Target 2.5 was available.

**Conclusion:**

Target 2.5 achievement can properly (and positively) be assessed on the basis of the 3EPR only for North Macedonia and Romania.

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress towards maintaining the genetic diversity (of seeds, cultivated plants and farmed and domesticated animals and their related wild species) made by the five remaining countries (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia and Uzbekistan), as well as all other reviewed countries should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 2.5 in Voluntary National Reviews**

Bulgaria, Georgia, Morocco briefly described their progress relevant to the achievement of SDG Target 2.5. Mongolia provided the values of SDG indicator 2.5.1 (separately for plant and for animal species genetic resources) in three subsequent years. Kazakhstan provided a national indicator. Albania reported in 2018 that the alignment of SDG2 Targets was good (50–75%, VNR), later specified that Target 2.5 is only partially (25–50%) aligned but provided no further details.

Belarus, Bosnia and Herzegovina, Montenegro, North Macedonia, Republic of Moldova, Romania, Serbia, Tajikistan, and Uzbekistan did not refer to Target 2.5.

**Target 2.5 achievement on the basis of VNRs and additional information provided in 2020 by countries**

**Bulgaria** referred (VNR) to the National Gene Bank for Plant Genetic Resources in Sadovo, the National Bank for Industrial Microorganisms and Cell Cultures, and the National Genetic Reserve of Bulgaria in Cattle Breeding.

**Georgia** mentioned (VNR) that the number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities has more than doubled since 2015.

According to the 6CBD NR by Georgia, informing on the progress towards the achievement of its relevant National Target C.5, numerous efforts were undertaken towards the achievement of Target 2.5 (however self-assessed as still insufficient to prevent the genetic erosion of the agricultural biodiversity in the country), involving a number of institutions.

For example, the Scientific-Research Center of Agriculture has ex situ collections of endemic species and indigenous varieties of field crops, vegetables, fruits (over 300 varieties) and grapevine (437 Georgian grapevine varieties); carried out an inventory and study on the rare plant species of forests, and the genetic resources of wild relatives of fruit trees (49 different fruit tree varieties maintained, and seed samples of 19 fruit species collected for seed bank). Furthermore, this Center elaborated a catalogue of indigenous agricultural varieties (incl. 4 endemic wheat crops, 3 varieties of corn, 5 varieties of beans) and supported

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activities aimed at the recovery and maintenance of local breeds and populations of various domestic animals (Megrelian red cow, Georgian mountain cow, Kakhetian and Svanetian pigs, Megrelian goat, Georgian fine wool and semi-fine wool sheep, Tushetian sheep, Imeretian sheep), poultry (local chicken, duck and Javakhetian goose), fish and beneficial insects (Georgian bee and local varieties of mulberry silkworms). In 2015–2018 the Institute of Botany, Ilia State University and the Georgian National Botanical Garden (National Seed Bank) collected and stored genetic material of over 130 endemic species and indigenous varieties of field crops, and 84 wild relatives of fruit and nut trees; carried out studies on the genetic diversity and utilization of selected species of economic importance, evaluated the extinction risk of 10 targeted tree species. The Plant Genetic Resources Bank of the Georgian Agrarian University stores 2,307 accessions of field and vegetable crops seed material (incl. 866 accessions of cereal crops, 193 - millet, 629 - legume, 45 - fodder, 351 - technical, 39 - aromatic and 184 vegetable crops).

Kazakhstan, in Appendices to the VNR, provided the value of its national indicator 2.5.2 “Increase in the number of rare and endangered species of ungulates” (for 2010, 2015, and 2018), for five ungulate species, showing fluctuating trends.

According to the 6CBD NR by the Republic of Moldova, the plant agrobiodiversity of the country, incl. wild relatives of some fruit crops, is preserved ex-situ in the national field or seed collections of the Institute of Plant Genetics and Physiology, the Scientific-Practical Institute of Horticulture and Food Technologies, Research Institute for Field Cultures “Selection”, Institute of Phytosanitary “Porumbeni”. The Gene Seed Bank collection at the Institute of Genetics, Physiology and Plant Protection holds genetic material in the number of about 5.4 thousand samples belonging to 34 botanical families, 145 genres and 223 species, including the most important cereals (wheat, rye, barley, triticale etc.), corn (over 700 samples), legumes (beans, chickpeas, beans, lentils), vegetables (tomatoes - about 820 shapes, peppers - 200 genotypes, eggplants - 60), aromatic and medicinal plants (150 samples).

In Annex 2 to its VNR, Mongolia provided values of the SDG indicator 2.5.1 for 2015, 2016 and 2017 (presumably the percentage of species genetic resources secured in the total number of species cultivated or farmed/taken): for plant species 20.6, 21.9 and 22.1 respectively (growing trend), and for animal species 55.7, 65.6 and 57.4 respectively (fluctuating trend).

Morocco reported that the number of plant genetic resources stored in gene banks increased from 22,000 to 67,970 accessions between 2008 and 2019 (VNR) which is further illustrated by a more detailed table (VNR) showing the trend in annual SDG indicator 2.5.1 values between 2015 and 2019 (growing trend).

According to additional information on the implementation of the 3EPR Recommendation 9.1 provided in 2020 by Morocco, the national gene bank was conserving and managing more than 66,000 accessions (representing 540 species and 154 genera), had an ex-situ structure containing (as of 2015) nearly 3,000 microorganisms (incl.1,451 catalogued strains, corresponding to 220 species), and a collection of germplasm and phytosilvatic resources which covers both native and exotic forms constituting 40 arboreta and comprising 114 populations.

According to the 6CBD NR by Serbia, the functions of the Plant Gene Bank of Serbia (based on the former Plant Gene Bank of Yugoslavia, never completed and remaining non-operational for 25 years) were entrusted since 2015 to the Maize institute “Zemun Polje”, which stored genetic resources of the National Collection (4,238 seed accessions of plant genetic resources in total, incl. 2,985 of grain and maize, 387 medicinal and aromatic herbs, 367 industrial plants, 284 fodder plants, 215 vegetables).

311 www.cbd.int/doc/nr/nr-06/rs-nr-06-en.pdf
**Conclusion:**

Target 2.5 achievement cannot properly be assessed on the basis of VNRs, except for Georgia, Mongolia and Morocco, with positive results in all three cases (further confirmed for Georgia and Morocco by the additional information received in 2020). The national indicator 2.5.2 provided by Kazakhstan does not allow to assess the stand of Kazakhstan vis-à-vis Target 2.5. Additional information provided in 2020 by the Republic of Moldova and by Serbia confirms that both above countries are also considerably progressing towards the achievement of Target 2.5.

**Comparison of results of the 3EPRs and VNRs analysis:** surprisingly, the successful North Macedonia and Romania (which progress has positively been evaluated on the basis of its 3EPR) did not further elaborate its VNRs in this respect.

**Target 6.6**

Target 6.6. By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

- Indicator 6.6.1 Change in the extent of water-related ecosystems over time
  
  

**Methodological remarks**

According to the definition of SDG indicator 6.6.1 the water-related ecosystems include five categories: vegetated wetlands, rivers and estuaries, lakes, aquifers, and artificial waterbodies. Therefore, the EPR expert should not be deceived by a much broader formulation of Target 6.6, also mentioning mountains and forests, although such do gather, store, and release water resources, feeding the water-dependent ecosystems, but should not be taken into account here. Similarly, marine and coastal ecosystems, despite being obviously water-related, are not to be considered for SDG indicator 6.6.1, as such are duly analysed under SDG 14.

It should also be noted that the methodology for calculating the value of this indicator (aimed to monitor the change over time) not only requires the access to data from the previous years, but is additionally quite complicated, due to the two levels approach applied, including 5 sub-indicators (2 sub-indicators based on globally available data from earth observations, to be later validated by countries against their own methodologies and datasets, and 3 sub-indicators based on data collected by countries). Hence, the feasibility of calculating the proper value of SDG indicator 6.6.1 or quoting such in the EPR (as the EPR experts cannot calculate it themselves) is quite limited.

It should also be noted that even though forests do store and release water resources, the spontaneous forest succession over drying up wetlands is lethal for the latter, as it largely enhances water evaporation. Hence, one of measures applied for wetlands maintenance is the removal of bushes and small trees to prevent the above.

**Coverage of Target 6.6 in 3EPR reports (since 2017)**

The progress towards the achievement of Target 6.6 was evaluated in SDG-related boxes of the 3EPRs for Bosnia and Herzegovina, North Macedonia, and Uzbekistan, as well as in the draft 3EPR of Romania. The value of SDG indicator 6.6.1. has never been provided (probably due to the complicated methodology).

**Target 6.6 achievement on the basis of the 3EPRs**
Chapter 4 (on the implementation of international agreements and commitments) of the 3EPR of **Albania** contains the information on the four Wetlands of International Importance (Ramsar sites), additionally designated as Important Bird Areas (IBAs), together encompassing the total area of 98,181 ha. One of these sites (Albanian Prespa Lakes) was designated within the 3EPR reporting period (in 2013). Management plans have been elaborated and adopted for all the above Ramsar sites, except for the River Buna section of the ‘Lake Shkodra/Shkodër and River Buna’ site, which was pending adoption as of early 2017.

3EPR SDG-related box of **Bosnia and Herzegovina** refers only to activities planned in the NBSAP under its Target 16 (e.g., converting strip-mine lakes into wetland habitats, or preserving riparian alder and willow forests), not yet the actual implementation of such. Chapter 5 (on the implementation of international agreements and commitments) contains the information on the three Ramsar Sites in Bosnia and Herzegovina: Hutovo Blato, Bardaca Wetland, and Livanjsko Polje, together encompassing the total area of 56,779 ha. None of these 3 sites has been designated within the 3EPR reporting period, but all were additionally protected as Important Bird Areas (IBAs). Bosnia and Herzegovina did not have a national wetland inventory or inventories at the state or entities level, and none of these the three Ramsar Sites had a management plan. It should be noted that similar information is missing in 3EPR Chapter 11 (on biodiversity and PAs).

Chapter 9 (on biodiversity and PAs) of the 3EPR of **Kazakhstan** contains detailed information on the network of ten Wetlands of International Importance, together encompassing the total area of 3,281,398 ha. As many as 8 out of these 10 Ramsar sites have been designated within the 3EPR reporting period. Pursuant to the 2006 Law on Specially Protected Natural Areas, all aquatic (including marine areas) and wetland sites of international importance enjoy legal protection and were included in the list of specially PAs, some of these Ramsar sites were located inside PAs of various national categories, one of them (Naurzum Lake System) has additionally been designated as the World Heritage property (Saryarka – Steppe and Lakes of Northern Kazakhstan). Furthermore, since 2013 other 44 wetland areas, together encompassing 1,773,408 ha in total, have been assigned the republican (national) significance.

In the EPR of **Mongolia** its Chapter 6 (on the implementation of international agreements and commitments) and Chapter 11 (on biodiversity and PAs) contain comprehensive and detailed information on the network of eleven Ramsar sites, covering in total 1,439,530 ha, nominated between 1997 and 2004 (last five in 2004). However, only part of these 11 Ramsar sites is protected under the state or local PA systems, and not all Ramsar sites in Mongolia have management plans.

3EPR SDG-related box for **North Macedonia** stated that despite negative trends observed in the extent of the lake and wetland ecosystems, resulting from the climate changes and the ongoing land uptake (threatening the remains of the marsh ecosystems in the lowland regions) not enough data were available to properly assess the value of SDG indicator 6.6.1. Both 3EPR Chapter 6 (on the implementation of international agreements and commitments) and Chapter 11 (on biodiversity and PAs) contain information on the two Ramsar sites, together encompassing the total area of 21,616 ha. None of these two Ramsar sites has been designated within the 3EPR reporting period, however the nomination of Lake Ohrid was planned for 2018 (according to 2018 NBSAP for 2018–2023). As at 2018, a national wetlands policy or a programme for wetlands conservation had neither been adopted nor implemented.

Chapter 11 on biodiversity and PAs in the 3EPR of **Romania** noted 20 sites designated (as of July 2020) as Wetlands of International Importance (Ramsar Sites) encompassing the total area of 1,175,880 ha, and that 12 of the above sites had been designated since 2012 (which therefore increased the Ramsar sites coverage since 2EPR by 252,283 ha). 3EPR Chapter 6 on implementation of international agreements and commitments reported that 15 Ramsar sites had a management plan but not all were being implemented and that an assessment of their effectiveness was never carried out, although some conclusions could be drawn from the monitoring of Natura 2000 sites (as all Ramsar sites designated in Romania overlap with the Natura 2000 network by at least 90 per cent).
Chapter 6 further elaborated on e.g., the cooperative management by Romania and Bulgaria of the three wetlands, which are part of the Lower Danube Green Corridor, and were recognized as Transboundary Ramsar Sites in 2013 and other relevant initiatives and achievements under the Ramsar Convention. As at 2020, a national wetlands policy was missing, however the 2013 NBSAP (for the period 2014–2020) prioritised the protection and restoration of wetlands and sustainable use of their resources (hence, could so far serve as a relevant policy tool for wetlands management, together with the National Management Plan for the Danube River Basin for the period 2016–2021). As for the SDG indicator 6.6.1, surprisingly 3EPR Chapter 9 on water management provided the value “1.07 per cent of the total area”, which equals the value of the per cent share of the permanent water body extent in the country’s total land area (see Table 9.12 showing selected data series under SDG indicator 6.6.2) and does not measure the change in the extent of water-related ecosystems over time.

Uzbekistan nationalized the SDG Target 6.6, simultaneously postponing its achievement from 2020 to 2030. The 3EPR SDG-related box emphasized that the processes of shallowing and desiccation of the remains of the former Aral Sea, as well as shrinkage or disappearance of lakes in the Amu Darya delta is still ongoing, while the water salinization is still increasing, which resulted in the disappearance of marine habitats and deterioration of water-related ecosystems on an unprecedented scale. Hence, the achievement of Target 6.6 is well beyond the capacity of Uzbekistan. Although, the national wetland policy and the corresponding programme for wetlands conservation were still missing. 3EPR Chapter 6 (on the implementation of international agreements and commitments), Chapter 9 (on water management), Chapter 11 (on biodiversity and PAs), and Chapter 12 (on energy and environment) all contain information on the two existing Ramsar sites, covering in total 558,400 ha. None of these two sites has been designated within the 3EPR reporting period. In 2016 Uzbekistan proposed the nomination of a third site (Tudakul and Kuymazar Water Reservoirs), however the revision of this submission, requested by the Ramsar Secretariat, had not yet been made. Only one of the existing two Ramsar sites is partly included into a PA, while its remaining part can be threatened by the planned nuclear power plant construction. None of these two Ramsar sites have a management plan.

**Conclusion:**

Target 6.6 achievement can properly be assessed on the basis of the 3EPR for all 7 countries. Visible progress can be noted in case of Albania, Kazakhstan and Romania, which protected their water-related ecosystems, also by designating new Ramsar sites, elaborating and adopting site management plans. In case of the remaining four countries no new designations took place, wetland inventories, wetland conservation plans and site management plans were missing.

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress made towards the achievement of the SDG Target 6.6 (protection and restoration of water-related ecosystems) by 4 remaining countries (Bosnia and Herzegovina, Mongolia, North Macedonia, and Uzbekistan), as well as all other reviewed countries should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 6.6 in Voluntary National Reviews**

Belarus, Bulgaria, Republic of Moldova briefly described their progress relevant to the achievement of Target 6.6. (even if not all of them explicitly referred to this particular Target). North Macedonia reported on the size of its water surface areas, and several watershed initiatives.

Albania, Bosnia and Herzegovina, Georgia, Kazakhstan, Mongolia, Montenegro, Morocco, Romania, Serbia, Tajikistan, and Uzbekistan did not refer to Target 6.6, despite that Bosnia and Herzegovina mentioned its Ramsar sites (under SDG 15), while Kazakhstan noted the changes in the extent of the Aral Sea and the Caspian Sea (both landlocked, thus facing different ecological threats than the typical marine...
ecosystems), and on Ramsar sites under SDG 14 (VNR), as well as on the development of the PA and IBA networks under Target 15.5 (VNR).

Target 6.6 achievement on the basis of VNRs and additional information provided in 2020 by countries
(for more updated information concerning Ramsar sites in 3EPR countries, according to RSIS as of early 2021, please see section 1.5 Trends in development and management of ecological networks)

Belarus referred (VNR) to the national strategic documents aimed at the development of a system of specially protected natural areas, the conservation and sustainable use of wetlands, peatlands, and the prevention of land degradation.

Bosnia and Herzegovina (VNR under SDG 15) mentioned its 3 Ramsar sites (according to the RSIS encompassing 57,192 ha in total, all designated before 2EPR) and briefly described the values of the Hutovo Blato Ramsar site (according to RSIS also a Nature Park, incl. 2 bird strict reserves) located in the Neretva River basin, listed among Important Bird and Biodiversity Areas (IBAs).

Bulgaria referred (VNR) to the works on the restoration of the favourable ecological status of wetlands, pursuant to the National Action Plan for Conservation of Wetlands of High Significance in Bulgaria for 2013–2022.

Kazakhstan noted (VNR) that all wetlands in the country have been assigned the PA status of vulnerable ecosystems from the point of view of biodiversity protection, and that 10 areas were protected under the Ramsar Convention.

The Republic of Moldova reported (VNR) on the bilateral and multilateral agreements concerning transboundary waters and watershed management (of the Dniester river concluded with Ukraine, of the Prut river with Romania and Ukraine), on establishing national Basin and Sub-Basin Committees, and developing and adopting River Basin Management Plans (however without any direct reference to the water-related ecosystems protection or restoration), and noted that wetlands of international importance (Ramsar sites) accounted for 2.22 per cent of the total surface of PAs (which encompassed 5.61 per cent of the country, hence, Ramsar sites covered only 0.12 per cent of the country territory).

According to the 6CBD NR by the Republic of Moldova, its 3 Ramsar sites (all designated between 2000 and 2005) encompass 113,858.5 ha in total. In 2018 a Biosphere Reserve “Prutul de Jos” (Lower Prut BR) was designated. It should be noted that this UNESCO designation relates to only a part (14,771.04 ha) of the Lower Prut Ramsar site area (19,152 ha). Furthermore, the Republic of Moldova reported that throughout the preceding decade (hence, since 2008) the water ecosystems area decreased by 600 ha (or 0.7%), which is the value of SDG indicator 6.6.1 (Change in the extent of water-related ecosystems over time).

According to the draft (4th cycle) EPR, in 2017 Morocco launched the National Wetlands Strategy 2015–2024 and resulting Action Plan, which stipulate the nomination of 30 new Moroccan sites for inclusion to the List of Wetlands of International Importance (the Ramsar List), and the implementation of 60 priority integrated wetland restoration action plans.

North Macedonia noted that its surface waters cover some 2 per cent of country territory, mentioned transboundary cooperation under the MoU for the Management of the Extended Transboundary Drin Basin (incl. Lake Ohrid Watershed Management Plan), and the project “Strumica River Basin – Implementation of the Strumica River Basin Management Plan” (however without any direct reference to the water-related

312 https://rsis.ramsar.org/ris/1105
313 https://en.unesco.org/biosphere/eu-na/lower-prut
314 https://rsis.ramsar.org/ris/1029
ecosystems protection or restoration), as well as the two existing Ramsar sites, and the initiative towards nominating Lake Ohrid as a third one.

According to the 6CBD NR by Serbia 10 Ramsar sites covered the total area of “615 22” ha (63,886 ha, according to Ramsar Sites Information Service, RSIS) thus 0.7 per cent of the country territory. It should be noted that, according to RSIS, all above 10 sites were designated prior to 3EPR. Furthermore, the report mentioned the Special Nature Reserve “Gornje Podunavlje” as one of the best preserved (legally protected since 1989) wetlands along the Danube River, located at the confluence of state borders of Serbia, Croatia and Hungary. According to 6CBD NR: “In order to protect and conserve the entire floodplain, UNESCO declares this area for the MAB cross-border biosphere reserve “Bačko Podunavlje” in 2017”. However, according to UNESCO, Bačko Podunavlje BR\(^{315}\) (encompassing the total area of 176,635 ha) was designated in 2017 solely inside Serbia, not as a transboundary BR.

According to additional information provided in 2020 by Uzbekistan, wetland conservation issues are duly included in its national conservation programme and policy on preserving biodiversity, approved (together with a roadmap for implementation) in 2019 by the Resolution of the Cabinet of Ministers of Uzbekistan “Strategy for preserving biological diversity in the Republic of Uzbekistan for 2019–2028”, of 11 June 2019, No. 484.

**Conclusion:**

SDG Target 6.6 achievement cannot properly be assessed on the basis of VNRs, not even for the Republic of Moldova. However, according to additional information (the value of SDG indicator 6.6.1) provided by this country in its 6CBD NR, the water ecosystems area slightly decreased between 2008 and 2018.

**Comparison of results of the 3EPRs and VNRs analysis:** for some reasons Albania, Kazakhstan and Romania (which progress has positively been evaluated on the basis of their 3EPRs) did not further elaborate their VNRs in this respect.

**Target 11.4**

Target 11.4 Strengthen efforts to protect and safeguard the world’s cultural and natural heritage

- Indicator 11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), 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)


Please note that the wording of this indicator has recently changed (E/CN.3/2020/2, Annex III) to read as “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)”.

**Methodological remarks**

Although the efforts to protect and safeguard the world’s natural heritage include e.g., the conservation and restoration of ecosystems, sustainable management of forests, reducing the degradation of natural habitats, halting the loss of biodiversity, and protecting species threatened by extinction – such are comprehensively dealt with under SDG Targets 15.1, 15.2, 15.4, and 15.5.

\(^{315}\) https://en.unesco.org/biosphere/eu-na/backo-podunavlje
Therefore, under Target 11.4 the EPR experts should first and foremost assess the current status and effectiveness of protection of the World Heritage properties (those nominated under ‘natural’ and ‘mixed’ criteria categories) previously designated in a respective country, and initiatives towards the nomination of new sites (by inscribing such into a national Tentative List).

However, the value of SDG indicator 11.4.1, measuring the financial commitment (expenditure on the preservation, protection and conservation of all cultural and natural heritage) will not yet allow to assess the effectiveness of expenditures covered.

**Coverage of SDG Target 11.4 in 3EPR reports (since 2017)**

The progress towards the achievement of Target 11.4 was evaluated in SDG-related boxes of the 3EPRs for five out of six countries (except for Kazakhstan), as well as in the draft 3EPR of Romania. However, the value of SDG indicator 11.4.1 has never been provided.

**SDG Target 11.4 achievement on the basis of the 3EPRs**

For more updated information concerning World Heritage properties designated in, or proposed by 3EPR countries, according to UNESCO databases as of early 2021, please see section 1.5 Trends in development and management of ecological networks.

3EPR SDG-related box for **Albania** refers to relevant national policy priorities, not yet their actual implementation. However, 3EPR Chapter 4 (on the implementation of international agreements and commitments) noted the first relevant World Heritage site (nominated under the ‘natural’ criteria, included in 2017 into the transnational property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”), on the 2011 submission concerning the nomination of the Albanian part for the inclusion into the “mixed category” “Natural and Cultural Heritage of the Ohrid Region” property (which extension has later been approved in 2019), and the 2014 inscription of another ‘mixed’ site (the “Ancient City of Apollonia”) to the national Tentative List. It should be noted that similar information was missing in 3EPR Chapter 9 (on biodiversity and PAs).

3EPR SDG-related box for **Bosnia and Herzegovina** refers to relevant national legal acts (but not yet their actual enforcement) and noted the presence of inventories for cultural (not natural) heritage, at the state and entity levels. However, 3EPR Chapter 5 (on the implementation of international agreements and commitments) noted 3 properties inscribed in the World Heritage List under the “cultural” category, and further 8 (including 4 proposed under the mixed cultural and natural category) inscribed to the national Tentative List (which information was not complete, as according to UNESCO,316 further 3 ‘natural’ sites were tentatively listed at the time of the 3EPR). It should be noted that similar information on World Heritage properties (existing or planned) was missing in 3EPR Chapter 11 (on biodiversity and PAs), which included the SDG-related box concerning Target 11.4 (however focused mainly on the planned extension of the PA network, which was more relevant to Target 15.1).

The 3EPR of **Kazakhstan** (in Chapter 9 on biodiversity and PAs) noted the presence of 5 World Heritage properties, including 2 first ‘natural’ sites, both successfully nominated within the 3EPR reporting period, both established on the basis of existing PAs, having legal entity status and management plans. One is additionally protected as a Ramsar site, while the other is part of a trilateral transnational property, shared by Kazakhstan with Kyrgyzstan and Uzbekistan. These two “natural” WH properties encompass the total area of 765,631 ha and have the external buffer area totalling for 281,437 ha (both above numbers refer solely to areas within the state boundaries of Kazakhstan). Furthermore, since 1998–2002 Kazakhstan was considering a further 13 areas for nomination to the World Heritage List, including 4 sites under ‘mixed’ (cultural and natural) criteria and 3 under natural criteria. Some of these proposed ‘mixed’ sites and all

three ‘natural’ sites include existing PAs. However, the national Tentative List by Kazakhstan was ongoing the revision process at the time of the 3EPR.

EPR SDG-related box for Mongolia emphasized the expressive public awareness on the significance of cultural and natural heritage for national identity, refers to the Mongolia Sustainable Development Vision 2030, and the relevant institutional framework for the achievement of Target 11.4. The box also noted that all natural and cultural heritage sites in the World Heritage List (except the one, recently inscribed Landscapes of Dauria) have management plans that were being implemented. 3EPR Chapter 11 (on biodiversity and PAs) noted the presence of 5 World Heritage properties, including 2 ‘natural’ sites, together encompassing 1,443,775 ha of the Mongolian territory, both being part of larger transnational WH properties, shared with the Russian Federation. Moreover, the Mongolian part of the Uvs Nuur Basin WH property has also been nominated as the UNESCO MAB Biosphere Reserve and is included in the bilateral Mongolian–Russian transboundary PA, while the Mongolian part of the Landscapes of Dauria site includes 2 existing PAs. Furthermore, 12 new areas have been inscribed into the national Tentative List, including 3 ‘natural’ and 1 ‘mixed’ site. All 3 proposed ‘natural’ sites encompass existing PAs, one of them is expected to stretch over almost 6,200,000 ha.

3EPR SDG-related box for North Macedonia refers to the relevant national legislative, policy (the National Strategy for Culture Development 2018–2022) and institutional frameworks in place. However, the box mentioned also the large infrastructural projects potentially threatening the integrity and values of the only WH property nominated in the country. 3EPR Chapter 6 (on the implementation of international agreements and commitments) and Chapter 11 (on biodiversity and PAs) contain more detailed information on this ‘mixed’ site, inscribed already in 1979 (originally under ‘natural’ criteria, since 1980 extended under the ‘cultural’ criteria). Furthermore, the country considered the nomination of 3 to 4 new areas, including some 2-3 under ‘natural’ criteria.

The 3EPR of Romania noted the 2 World Heritage properties designated under the ‘natural’ criteria, Danube Delta (in 1991) and part of the transnational property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”, recently extended in July 2017 (since then involving already 12 countries), when Romania contributed with 8 plots of the total area of 23,982.77 ha (which accounts for 26.06 per cent of the area of this WH property, totalling for 92,023.24 ha) and additional 64,476.66 ha of the buffer zone (which therefore accounts for 25.4 per cent of its buffer zone, totalling for 253,815.38 ha). It should be noted that information on the latter WH property is incorrect in 3EPR Chapter 11 on biodiversity and PAs which noted that “The Romanian part covers 92,023 ha of forests in eight designated sites” (which cannot be true, as it would then equal to the total size of the WH property, shared by 12 countries).

Another possible inconsistency can also be noted concerning the logging operations undertaken in old-growth forests in the buffer zones of the Romanian components of this property, which resulted in issuing 2 decisions (in 2018 and 2019) by the World Heritage Committee, and the joint WH Centre/IUCN Reactive Monitoring mission undertaken to Romania in 2019 (best described in 3EPR Chapter 6). Chapter 6 noted that Romania in 2019 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 (However, Chapter 6 only quoted the official clarification, and did not state whether it was justified or not, as the Reactive monitoring report had, as at November 2020, not yet been presented or approved by the World Heritage Committee). Chapter 11 stated that “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.” (hence, supports the official clarification). However, Chapter 5 noted that the corresponding logging permits issued by Romsilva in 2018 were suspended by the court in November 2019 (which would probably not be the case if the activity had been legal and properly implemented).

317 https://whc.unesco.org/en/list/1133/
Chapter 6 also noted that potential 4 other 'natural' criteria (Massif du Retezat, Pietrosul Rodnei, Codrul secular Slătioara, Sinpetru) remained since 1991 on the WH Tentative List by Romania, but their possible nomination was still pending. Both Chapter 6 and Chapter 11 inform that no data were available for the assessment of achievement of the SDG target 11.4 by Romania on the basis of the SDG indicator 11.4.1.

3EPR SDG-related box for Uzbekistan noted that the country nationalized the SDG indicator 11.4.1 in a way that does not allow the assessment of efforts to protect and safeguard the world’s cultural and natural heritage (as a result of re-phrasing of the indicator definition to read as “State budget expenditure on cultural development per capita”). 3EPR Chapter 6 (on the implementation of international agreements and commitments) and Chapter 11 (on biodiversity and PAs) inform on the five WH properties in the country, including one nominated under “natural” criteria (in 2016), part of the trilateral transnational property shared with Kazakhstan and Kyrgyzstan, including parts of PAs present in Uzbekistan. Further 30 areas were considered for inscription, including three “natural” and three “mixed” proposed sites inscribed by Uzbekistan to the national Tentative List already in 2008. However, the national Tentative List was ongoing the revision process at the time of the 3EPR.

**Conclusion:**

Target 11.4 achievement can properly be assessed on the basis of the 3EPR for all 7 countries. The progress in nomination of relevant new WH properties can also be noted in all seven countries, however the achievement of Target 11.4 seems to be most spectacular in case of Kazakhstan and Mongolia, where the existing large-scale ‘natural’ WH properties were adequately integrated into the other international frameworks as well as national PA systems. However, the value of SSDG indicator 11.4.1 has never been provided.

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress in the successful nomination of the new ‘natural’ and ‘mixed’ WH properties in Albania, Bosnia and Herzegovina, North Macedonia, Romania and Uzbekistan, as well as the effective preservation of WH sites by all reviewed countries should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 11.4 in Voluntary National Reviews**

Albania reported in 2018 that the alignment of SDG11 Targets was good (50-75%) specified that Target 11.4 is fully aligned. Albania, Bulgaria, Kazakhstan, North Macedonia, and the Republic of Moldova briefly described their progress relevant to the achievement of Target 11.4. Mongolia and the Republic of Moldova provided the value of SSDG indicator 11.4.1.

Belarus, Bosnia and Herzegovina, Georgia, Montenegro, Morocco, Romania, Serbia, Tajikistan, and Uzbekistan did not refer to SDG Target 11.4 (despite that Romania mentioned its WH properties in the 2018 VNR).

**Target 11.4 achievement on the basis of VNRs and additional information provided in 2020 by countries**

For more updated information concerning ‘mixed’ and ‘natural’ World Heritage sites in 3EPR countries, according to UNESCO databases as of early 2021, please see section 1.5 Trends in development and management of ecological networks.

Albania in its VNR mentioned Target 11.4 in the context of its Urban Renaissance Programme, which priority areas of intervention included the revitalisation of cultural, natural and historical heritage areas. In

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2014–2017 under the above programme the Government financed 637 different projects with a total amount of 480 million USD. However, the share of expenditures on the preservation, protection and conservation of all cultural and natural heritage has not been specified, and no particular World Heritage designations or properties have been mentioned in the VNR.

According to the self-assessment on the implementation of the 3EPR recommendations provided in 2020 by Bosnia and Herzegovina (which did not refer to WH sites in its VNR), the four ‘natural’ sites present on its national Tentative List include the strictly protected forest nature reserves Perućica and Janj (the first as a separate new property, the latter proposed for inclusion into the transnational property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”). However, only the latter is a new submission (of 31 January 2019), while the “Strict Nature Reserve – Primeval Forest Perućica” was added to the Tentative List in May 2017 (hence, before the 3EPR). Furthermore, according to UNESCO, in April 2019 a complex of travertine waterfalls in Martin Brod - Una National Park (not mentioned by Bosnia and Herzegovina) has also been added to the national Tentative List. The progress in official nomination of these sites should possibly be verified under the future fourth EPR cycle.

Bulgaria mentioned (VNR) three natural sites inscribed in the UNESCO World Heritage List, the third one (not yet mentioned in the 3EPR) is the Bulgarian component (9 reserves inside the Central Balkan National Park) of the transnational WH property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”, and specified that the Tentative List included 5 natural criteria sites (Belogradchiski Skali, Pobiti Kamani Natural Landmark, Central Balkan National Park, Rusenski Lom Nature Park, and Vrachanski Karst Nature Reserve).

Kazakhstan in its VNR mentioned its 10 WH properties (however none nominated under the natural criteria), including the Kazakh component of the transnational ‘Silk Roads: the Routes Network of Chang'an-Tianshan Corridor’ World Heritage Serial Nomination project, shared with China and Kyrgyzstan, which is planned to be further extended by adding other historical sites in Kazakhstan.

The Republic of Moldova mentioned relevant national legal acts in its VNR and noted that the value of SDG indicator 11.4.1 accounted for 0.06 per cent, mentioned the existing one UNESCO World Heritage property (“Struve Geodetic Arch”) nominated in 2005, and the two sites remaining on its Tentative List (“Chernozems in the Balti steppe” added in 2011, and “Orheiul Vechi Archaeological Landscape” in 2017). However, none of the above are sites of the ‘natural criteria’ category, while the “Typical Chernozem soils of the Balti Steppe” (proper official name of this tentatively listed property) is in the ‘mixed’ category and comprises five long-term agricultural field experiment sites.

In Annex 2 to its VNR, Mongolia provided values of the SDG indicator 11.4.1 (however referred to as “11.2.1(2)”, and without stating the measurement unit) for 2015, 2016 and 2017: 52.3, 163.4 and 201.9 respectively (growing trend).

North Macedonia in its VNR mentioned its National Strategy for the Protection and Use of Cultural Heritage (and its Action Plan), the recent application for the WH nomination concerning “Dlaboka Reka” site located within Mavrovo National Park (old growth beech forest, hence under ‘natural criteria’), public awareness-raising campaigns and educational programs.

Conclusion:

Target 11.4 achievement cannot properly (by using SDG indicator 11.4.1) be assessed on the basis of VNRs, except for Mongolia.

Comparison of results of the 3EPRs and VNRs analysis: the assessment based on the analysis of VNRs confirmed the positive conclusion of the assessment carried out on the basis of the 3EPRs for Mongolia.

However, for unknown reasons, Kazakhstan (which progress has positively been evaluated on the basis of its 3EPR) did not further elaborate its VNRs in this respect.

**Target 14.2**

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.

Please note, that the SDG Target 14.2 corresponds with the Aichi Biodiversity Target 6 “By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits”.

- Indicator 14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches
  [https://unstats.un.org/sdgs/metadata/files/Metadata-14-02-01.pdf]

  Please note that the wording of this indicator has recently changed (E/CN.3/2020/2, Annex III) to read as “Number of countries using ecosystem-based approaches to managing marine areas”.

**Coverage of Target 14.2 in 3EPR reports (since 2017)**

The progress towards the achievement of Target 14.2 was evaluated in SDG-related boxes of the 3EPRs only for Bosnia and Herzegovina. Target 14.2 is non-relevant to the landlocked Mongolia and North Macedonia, and unfortunately no longer to Uzbekistan.

**Target 14.2 achievement on the basis of the 3EPRs**

According to 3EPR Chapter 7 (on water management) and Chapter 9 (on biodiversity and PAs), although some 47 per cent of the total fish catch is of marine origin, and the Albanian coast is 418 km long, marine and coastal biodiversity is not regularly monitored and related information is scarce.

The progress towards the achievement of Target 14.2 by Bosnia and Herzegovina was evaluated in its two 3EPR SDG-related boxes, in Chapter 9 (on the Adriatic Sea Protection) and Chapter 11 (on biodiversity and PAs). The box in Chapter 9 emphasized that Target 14.2 will not be achieved unless Target 14.1 is achieved, while the box in Chapter 11 noted that neither the data on marine ichthyofauna was available, nor the research had been carried out, and that the law regulating marine fishing was missing.

As for Kazakhstan, its 3EPR Chapter 9 (on biodiversity and PAs) noted the pressures on the land-locked Caspian Sea ecosystem resulting from water contamination and accumulation of pollutants, the rapid development of offshore and shoreline oil and natural gas mining, as well as deliberate introduction of non-native fish species for aquaculture and commercial fishery, and the uncontrollable spread of incidentally introduced IAS, further aggravated by the loss of important fish habitats, impeded access to fish spawning grounds, poaching and unsustainable fishing practices, which all resulted in the extinction of several marine species and considerable depletion of fish stocks.

3EPR Chapter 11 of Romania states that, as at December 2019, because of lack of data, it was impossible to evaluate Romania’s efforts to achieve SDG target 14.2. However, further the same Chapter 11 noted that Romania was in the process of implementing the EU Marine Strategy Framework Directive[320] and is a

[320] [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0056]
signatory to the Black Sea Convention. It should also be noted, that for marine fisheries, quotas are determined by the EC within the Common Fisheries Policy, control of marine fisheries is undertaken in coordination with Frontex, and that Romania adopted the Multiannual National Strategic Plan for Aquaculture and an Operational Programme for Fisheries and Maritime Affairs 2014–2020 (see 3EPR Chapter 2), which combination shall prevent the overfishing, and probably take due account of the ecosystem-based approach.

**Conclusion:**

Target 14.2 achievement can be assessed on the basis of the 3EPR for all 4 countries, with possible positive result only for Romania (however not with the use of SDG indicator 14.2.1). However, with a negative score in all remaining other 3 cases, due to either the lack of research and data, or the intensity of uncontrolled pressures on marine and coastal environments, which make the sustainable management and protection of marine and coastal ecosystems not yet feasible.

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress on sustainable management and protection of marine and coastal ecosystems made by Albania, Bosnia and Herzegovina, and Kazakhstan (as well as all other reviewed countries to which Target 14.2 is relevant) should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 14.2 in Voluntary National Reviews**

Morocco comprehensively described its progress towards the achievement of Target 14.2 and provided the values of the related SDG indicator. Albania reported in 2018 that the alignment of SDG14 Targets was limited (<25%, VNR), and referred to policy framework. Bosnia and Herzegovina only mentioned (VNR) several identified anthropogenic influences posing threats to the coastal and marine ecosystems. Bulgaria, Kazakhstan, briefly described their progress relevant to the achievement of Target 14.2.

Georgia, Montenegro and Romania did not refer to Target 14.2 (which is non-relevant to the landlocked Belarus, Mongolia, North Macedonia, Republic of Moldova, Serbia, Tajikistan, and unfortunately no longer to Uzbekistan).

**Target 14.2 achievement on the basis of VNRs and additional information provided in 2020 by countries**

**Albania** noted (VNR) its Strategic Plan for Marine and Coastal Protected Areas, incorporated into the Strategic Document for Biodiversity Protection and approved by the Council of Ministers. However, in the statistical annex to its VNR, Albania noted that no statistical data related to SDG14 is available.

Even though **Belarus** is a land-locked country, it emphasized its contribution to the achievement of SDG14 by combating the pollution and limiting wastewater discharges into rivers flowing into the Baltic and Black Seas.

**Bulgaria** described (2020 VNR) challenges related to the management and protection of the Black Sea marine ecosystems, measures taken (also in transnational cooperation under the 1992 Convention on the Protection of the Black Sea against Pollution, and its 1996 Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea) and achieved results (however with no explicit reference to Target 14.2).

According to additional information provided in 2020 by Bulgaria on its progress in achievement of SDG Target 14.2, in accordance with the Marine Strategy Framework Directive 2008/56/EU the country has developed a Marine Strategy, while the development of the Maritime Spatial Plan of the Republic of Bulgaria 2021–2035 (covering the Bulgarian territorial waters in the Black Sea) was at a final stage. The latter policy document aims at balancing interests in various maritime sectors and ensure their sustainable
development, while preserving the sensitive marine environment. Furthermore, the above spatial planning works were coordinated with neighbouring Romania, under the second phase of Cross-border Maritime Spatial Planning for Black Sea – Bulgaria and Romania Project (MARSPLAN-BS II).

According to additional information provided in 2020 by Georgia on its progress in achievement of SDG Target 14.2, the country was developing its National Marine Environment Strategy and Action Program, with the aim to implement the Environmental Program in accordance with the EU-Georgia Association Agreement.

Kazakhstan provided (VNR) comprehensive information on measures undertaken in order to mitigate the Aral Sea disaster (including the establishment of the International Fund for Saving the Aral Sea), as well as activities undertaken in the Caspian Sea basin.

Morocco in its VNR reported on the launch (in 2019) of diagnostic studies of the state of coastal and marine areas, in order to assess the vulnerability of Moroccan coasts to natural risks and accidental marine pollution. Morocco provided the values of the SDG indicator 14.2.1, between 2015 and 2018 its national exclusive economic zones managed using ecosystem-based approaches accounted for 1.2 million km².

According to the draft (4th cycle) new EPR, in February 2020 Morocco adopted the National Integrated Coastal Management Plan, to promote a resilient, inclusive, sustainable, and efficient development of the country’s coastline, with the objective of reconciling environmental protection and economic activity.

**Conclusion:** Target 14.2 achievement cannot properly be assessed on the basis of VNRs, except for Bulgaria, Kazakhstan, and Morocco. In 2020 Bulgaria and Georgia informed the ECE EPR team on the development of relevant marine strategies, which actual implementation should therefore potentially be assessed under the future fourth EPR cycle.

**Comparison of results of the 3EPRs and VNRs analysis:** the limited progress towards Target 14.2 achievement by Albania, and by Bosnia and Herzegovina can be stated on the basis of both their 3EPRs and VNRs.

**Target 14.5**

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

- Indicator 14.5.1 Coverage of PAs in relation to marine areas
  

**Coverage of SDG Target 14.5 in 3EPR reports (since 2017)**

Please note that more information concerning trends in development and management of PAs (including, where relevant, coastal and marine PAs) is available in section 1.4 of this document. Therefore, the below assessment of Target 14.5 achievement is mainly based on the contents of the relevant 3EPR SDG-related boxes.

The progress towards the achievement of Target 14.5 was evaluated in SDG-related boxes of the 3EPRs for Bosnia and Herzegovina and Kazakhstan, as well as in the draft 3EPR of Romania. The value of SDG indicator 14.5.1 was never provided. SDG Target 14.5 is non-relevant to the landlocked Mongolia and North Macedonia, and no longer to Uzbekistan.

**SDG Target 14.5 achievement on the basis of the 3EPRs**
The 3EPR of Albania did not include an SDG-related box for Target 14.5, but its Chapter 9 (on biodiversity and PAs) noted the presence of Karaburun-Sazan Marine National Park (est. 2010, where a management plan was adopted in 2015) and the ongoing procedure for the proclamation of the Porto Palermo marine PA.

The progress towards the achievement of SDG Target 14.5 by Bosnia and Herzegovina was evaluated in two 3EPR SDG-related boxes: in Chapter 9 (on Adriatic Sea Protection) and Chapter 11 (on biodiversity and PAs). The box in Chapter 9 noted that no potential marine PAs along the coast of Bosnia and Herzegovina were discussed, while the box in Chapter 11 mentioned the planned establishment of a botanical reserve “Mediteranetum” in the area of Neum-Klek Bay, which would then become the first marine PA in the country. This inconsistency of information between the two 3EPR chapters should be noted.

As for Kazakhstan, the SDG-related box for Target 14.5 states that due to the designation of a large state preserved zone (662,630 ha) in the northern part of the Caspian Sea, the value of SDG indicator 14.5.1 must be well above the level of 10 per cent expected in Target 14.5. However, little information on this state preserved zone and the effectiveness of its protective regime (if any) was available.

3EPR Chapter 11 of Romania noted that the country had designated within its coastal area both PAs of national categories (nature reserves) as well as of European (Natura 2000) and international interest (biosphere reserves, wetlands of international importance). The total surface of marine areas protected under the Birds and Habitats Directives had increased in Romania 4.7-fold, from 1,252 km² in 2008 to 6,362 km² in 2016. Furthermore, according to Chapter 11, the sufficiency of marine SCIs (measured by Eurostat for the entire EU using a sufficiency index) in Romania, as at December 2019, “has exceeded the threshold of 100 per cent” (despite that 100 per cent probably cannot be exceeded?), thus considerably increased, compared to some 75 per cent in 2013. 321

Conclusion:

Target 14.5 achievement can be assessed on the basis of the 3EPRs for Albania (however more precise information on its marine PAs was missing), Romania (which considerably increased its protected marine areas within the 3EPR reporting period) and possibly also for Kazakhstan (despite that more precise information on the Caspian Sea protected zone was not available).

Resulting recommendation for the fourth EPR cycle:

The assessment of the progress in the designation and effective management of coastal and marine PAs made by Albania, Bosnia and Herzegovina, and also Kazakhstan (as well as all other reviewed countries to which Target 14.5 is relevant) should possibly be conducted under the future fourth EPR cycle.

Coverage of Target 14.5 in Voluntary National Reviews

Morocco comprehensively described its progress towards the achievement of Target 14.5 and provided the values of the related SDG indicator. Albania reported in 2018 that the alignment of SDG14 Targets was limited (<25%, VNR). Albania, Bosnia and Herzegovina, Bulgaria, and Kazakhstan briefly described their progress relevant to the achievement of Target 14.5.

Georgia, Montenegro and Romania did not refer to Target 14.5 (which is non-relevant to the landlocked Belarus, Mongolia, North Macedonia, Republic of Moldova, Serbia, Tajikistan, and unfortunately no longer for Uzbekistan).

Target 14.5 achievement on the basis of VNRS and additional information provided in 2020 by countries

Please note that more information concerning trends in development and management of PAs (including, where relevant, coastal and marine PAs) is available in section 1.4 of this assessment.

**Albania** noted (VNR) the Strategic Plan for Marine and Coastal Protected Areas, incorporated into the Strategic Document for Biodiversity Protection and approved by the Council of Ministers.

According to additional information provided in 2020 by Albania on its progress in achievement of CBD Aichi Target 11, its marine PAs encompassed 13,261.20 ha.

**Bosnia and Herzegovina** noted (VNR) that although the country still had no PAs conserving coastal and marine areas, the designation of the first marine PA in BiH (botanical reserve “Mediternetum” including the aquatic area) was planned in Neum municipality.

**Bulgaria** noted (VNR) the research carried out by the Institute of Oceanology in Varna aimed at the assessment of the environmental status of the Black Sea, on the methodology for assessing the condition (status) of Bulgarian marine ecosystems as well as their ecosystem services potential, and on the increase in the surface of marine sites designated under NATURA 2000 in order to protect the Black Sea marine ecosystems, from 926 km² in 2011, to 2,827 in 2015 and 2018 (more detailed statistical data were provided in the Statistical Monitoring Annex to VNR).

According to additional information provided in 2020 by Bulgaria on its progress in achievement of SDG Target 14.5, the Natura 2000 network in Bulgaria consisted of 341 sites, covering 41,554 km². Terrestrial sites covered 38,728 km² (35 per cent of the land area) while marine N2000 sites covered 2,827 km² (SCIs 2,482 km², SPAs 550 km²). PAs of national categories encompassed 584,530 ha (5,845.3 km²) which accounted for 5.3 per cent of the country’s territory. The above included 3 marine PAs, covering in total 1,195 ha (Kaliakra Nature Reserve 400 ha, Koke trais protected site 760 ha, and Chengene skele protected site / IBA covering 35 ha). According to available sources, from among the above 3 marine or coastal PAs only Koke trais PA was designated within the 3EPR reporting period.

According to additional information provided in 2020 by **Georgia** on its progress in achievement of SDG Target 14.5, the marine area of Kolkheti National Park is 15276 ha. As of 2020, there were no plans for the designation of any new marine PA.

**Kazakhstan** noted (VNR) the Ramsar sites in the northern part of the Caspian Sea and adjacent Kazakh parts of the deltas of the Volga and Ural Rivers, and on challenges resulting from the operation of oil mining fields in these areas.

**Morocco** in its VNR assessed that in 2016 the proportion of marine PAs in the total territory of the country (SDG indicator 14.5.1) accounted only for 0.0007 per cent, which is well below the 10 per cent target. In this context, Morocco emphasized the need to highlight the cultural heritage and natural coastline in the strategic axes of the National Coastal Plan, begun inventory works, classification of historical monuments and coastal archaeological sites, and the restoration and enhancement of the Cultural Heritage of Coastline in 2018–2019 (VNR). In this context Morocco also mentioned its Coastal Protection Program.

**Conclusions:** Target 14.5 achievement cannot properly be assessed on the basis of VNRS, except for Bosnia and Herzegovina (no marine PAs at all) and Morocco (negligible PA coverage, well below the 10 per cent target).

Despite that in 2020 Bulgaria noted the extensive surface of its marine N2000 sites, Albania on the total area of its marine PAs, and Georgia on the size of marine area of Kolkheti NP, their progress cannot
properly be assessed on the basis of SDG indicator 14.5.1 as long as the information on the total size of their marine areas is not provided.

**Comparison of results of the 3EPRs and VNRs analysis:** the VNRs of Bosnia and Herzegovina, and of Kazakhstan confirm findings of their 3EPRs. For unknown reasons, Romania (which progress has positively been evaluated on the basis of its 3EPR) and Bulgaria (where marine N2000 sites covered as much as 2,827 km²) did not further elaborate its VNRs in this respect.

**Target 15.1**

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.

Please note, that the SDG Target 15.1 corresponds with the Aichi Biodiversity Target 5 “By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced” and the Aichi Biodiversity Target 11 “By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems”.

- Indicator 15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs, by ecosystem type https://unstats.un.org/sdgs/metadata/files/Metadata-15-01-02.pdf

**Methodological remarks**

In the opinion of the author of this assessment, SDG indicator 15.1.2 cannot be credible for the vast majority of countries concerned, and the methodology for its computation is based on unrealistic assumptions. According to the definition of this indicator, sites important for terrestrial and freshwater biodiversity are those identified as KBAs, including IBAs, and Alliance for Zero Extinction sites.

However, the identification and delimitation of such areas and sites requires complete multidisciplinary scientific research, field nature inventorying works undertaken at the national scale, and effective long-term biodiversity monitoring which is a common challenge and bottleneck for the assessed countries.

Therefore, the value of SDG indicator 15.1.2 cannot properly be measured prior to the successful delimitation of sites and areas important for terrestrial and freshwater biodiversity, preferably confirmed by the official decision of the relevant authorities of a particular country on the adoption of e.g., the list of such priority importance sites and areas.

Despite the above reservations, if really deemed necessary, the values and trends in e.g., SDG indicator 15.1.2 are often available for a particular country at the website of the BIP initiative. However, in the opinion of the author of this assessment, such indicator values should rather be perceived only as rough estimates and interpreted by the EPR experts with caution.

**Coverage of Target 15.1 in 3EPR reports (since 2017)**

Please note that more information concerning trends in ecosystems is available in sub-section 1.1., while trends in development and management of PAs and ecological networks (as of early 2021) are assessed in sub-sections 1.4. and 1.5. Therefore, the below assessment of Target 15.1 achievement is mainly based on the contents of the 3EPR SDG-related boxes relevant to this Target.
The progress towards the achievement of Target 15.1 was evaluated in SDG-related boxes of the 3EPRs for all six countries, as well as in the draft 3EPR of Romania, however not always with the use of SDG indicators 15.1.1 and 15.1.2.

**Target 15.1 achievement on the basis of the 3EPRs**

The 3EPR SDG-related box for **Albania** positively assessed the progress towards the extension of the PA network (from 3.6 per cent of the national territory in 2002 to 16.61 per cent in 2015, thus since 1EPR until 2015, while the progress within the actual 3EPR reporting period was only 1.61 per cent between 2012 and 2015, and no new PAs were designated in 2015–2017) and noted the planned designation of two new national parks. However, the progress in adopting PA management plans was much slower, the PA management effectiveness and law enforcement remained a key challenge for achievement of Target 15.1. The values of related indicators were not provided in the box, despite that 3EPR Chapter 9 (on biodiversity, forestry and PAs) noted that in 2015 forests accounted for approximately 36 per cent of the country’s territory (SDG indicator 15.1.1).

As for **Bosnia and Herzegovina**, the 3EPR SDG-related box mentioned the planned extension of the PA network, and referred to the NBSAP Target 15, but did not assess its actual implementation. No indicators were provided in the box. 3EPR Chapter 11 (on biodiversity and PAs) noted that existing 30 PAs covered only 2.07 per cent of the national territory, and that since 2013 (the 3EPR reporting period begun in 2010) 10 PAs were designated (2 protected landscapes, 1 forest park, 7 caves), but of the total area of only some 1,544 ha. Chapter 11 included also a table providing detailed overview of existing PAs in Bosnia and Herzegovina, as of July 2017 (table 11.1).

As for the forests, 3EPR Chapter 12 on forestry and environment noted that, according to the “current data” (no reference year provided) in the FBiH, the share of forests (which covered 1,465,600 ha) accounted for 56.2 per cent (or, together with other wooded land, as much as 64.89 per cent) of its territory, while in RS forests covered 1,426,000 ha or 57.87 per cent of the territory, and that the forest cover has increased in recent years, especially since 2011.

Some inconsistencies can be noted in Chapter 12, which noted that “The second NFI, which was conducted between 2006 and 2009, provides the most up-to-date forest information” (hence, the timeliness of the above quoted “current data” is even less clear) while in the next sentences Chapter 12 referred to more update information, by saying that “In 2011, the forest and forestland area in the FBiH was 1,172,974 ha and in RS 982,893 ha. The second NFI shows that these areas have increased to 1,692,700 ha in the FBiH and 1,525,800 ha in RS from 2006 to 2009 (table 12.1)”. It should be noted that the comparison of the above data for 2011 and 2009 would indicate an alerting significant decrease by 30.7 per cent for the FBiH, and by 35.58 per cent for RS, within the very short period 2009–2011 (which therefore probably did not take place).

3EPR SDG-related box for **Kazakhstan** noted the low value of SDG indicator 15.1.1 (forest cover of only 4.7 per cent of the country territory) despite intensive afforestation and reforestation works carried out each year (which would not significantly improve the picture in a short-term, due to the extensive country territory). Similarly, the share of PAs in the country’s territory accounted for only 8.94 per cent. Furthermore, the box emphasized the progress in granting the legal protection for wetland areas, but also the uneven coverage of different natural ecosystem types by existing PAs and the absence of several ecosystem types representative of Kazakhstan in the most effective PAs of the legal entity status.

According to the SDG-related box in Chapter 13 (on forestry and environment) of the EPR of **Mongolia** the forest area as a proportion of total land area (SDG indicator 15.1.1) accounted for 7.85 per cent, which is planned to increase to 8.3 per cent by 2020 and 9.0 per cent by 2030, due to the reforestation and afforestation activities, highly prioritized by the Government. Mongolia was the only 3EPR country where the values of the SDG indicator 15.1.2 were available, calculated in 2010 separately for each of 19 natural
ecosystem types. In result, the SDG-related box in Chapter 11 (on biodiversity and PAs) emphasized that the 4 steppe ecosystems, which together cover 55.42 per cent of the country and are therefore the most representative of Mongolia, had the smallest (between 4.24 and 7.62 per cent) PA coverage in 2010.

The SDG-related box for North Macedonia noted that within the 3EPR reporting period the value of SDG indicator 15.1.1 (Forest area as a proportion of total land area) increased from 38.18 per cent to 38.95 per cent; and that the coverage of terrestrial and freshwater KBAs by PAs accounted, as at 2018, for some 21 and 86 per cent respectively (SDG indicator 15.1.2).

Chapter 11 of the 3EPR of Romania noted that the share of forest area in the total land area increased from 28.32 per cent in 2010 to 30.12 per cent in 2016 (SDG indicator 15.1.1), i.e., by only 1.8 per cent, and as of 2020 remained at the same level. However, the same Chapter provided quite different numbers, stating that “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 2012)”. The 27.6 value is probably correct, confirmed by 2018 VNR by Romania, reporting that the area covered by forests accounted for some 6.565 million ha, thus 27.5 per cent of the territory. The values of the SDG indicator 15.1.2 were also provided, separately for terrestrial and freshwater ecosystems, where the PA coverage of the KBAs increased in 2010–2019 from 65.03 to 76.02 per cent (i.e. by 10.99 percentage points) in terrestrial ecosystems, and from 57.43 to 60.97 per cent (i.e. by only 3.54 percentage points) in freshwater ecosystems.

As for Uzbekistan, the 3EPR SDG-related box noted the increase in the value of SDG indicator 15.1.1 (Forest area as a proportion of total land area) from 6.63 to 7.26 per cent within the 3EPR reporting period. Simultaneously, the share of the total area of the “state forest fund land” increased from 21.08 per cent to 25.09 per cent of the country’s territory (however, it should be noted that this statistical land classification category also includes areas potentially suitable for afforestation, and that the national inventory of forests and state forest fund land was last carried out in 1987). The value of SDG indicator 15.1.2 could not be estimated due to the lack of data, but in general the coverage of natural ecosystems by PAs was uneven, and several key ecosystems were considerably under-represented in the PA network, which did not overlap 24 (out of 36) KBAs, and 35 (out of 52) IBAs.

Conclusion:

Target 15.1 achievement can properly be assessed on the basis of the 3EPRs for all 7 countries (despite that the values of both SDG indicators were provided only for Mongolia, North Macedonia, and Romania).

The progress made towards the achievement of Target 15.1 within the 3EPR reporting period can be best described as moderate, which clearly indicates reforestation, afforestation, and the further extension of the PA networks as the possible priorities for the next programming periods.

Resulting recommendation for the fourth EPR cycle:

The assessment of the progress made towards the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems by all above countries (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, Romania, and Uzbekistan), as well as all other reviewed countries should possibly be conducted under the future fourth EPR cycle.

Coverage of Target 15.1 in Voluntary National Reviews

Mongolia, Morocco, North Macedonia and Romania described their progress towards the achievement of Target 15.1, and either provided the values of related indicators, or similar data. Albania reported in 2018 that the alignment of SDG15 Targets was partial (25-50%, VNR). Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Republic of Moldova briefly described their progress relevant to the
achievement of Target 15.1. Serbia and Uzbekistan provided the value of the SDG indicator 15.1.1, while Kazakhstan provided values of two indicators (1 global and 1 national).

Montenegro, and Tajikistan did not refer to Target 15.1.

**Target 15.1 achievement on the basis of VNRs and additional information provided in 2020 by countries**

Please note that more information concerning trends in ecosystems is available in sub-section 1.1., while trends in development and management of PAs and ecological networks (as of early 2021) are assessed in sub-sections 1.4. and 1.5.

In the statistical annex to VNR Albania indicated that 1998–2016 is the available time series for measuring the SDG indicator 15.1.1, and noted the recent changes in its value, from 37.99 per cent in 2013, to 38.42 in 2014, and 38.41 in 2015 and 2016, which is more a precise information on trends in the share of forest area in the total land area than provided in 3EPR, but not fully compatible with the 3EPR, where this value was estimated for some 36 per cent in 2015, thus less than in the VNR. Neither the value of SDG indicator 15.1.2 nor information on the size of PA network was provided in 2018 VNR by Albania.

However, according to additional information provided in 2020 by Albania on its progress in achievement of CBD Aichi Target 11, its 53 PAs of different IUCN categories encompassed 504,826.3 ha in total. Marine PAs accounted for 3 per cent of the above (13,261.20 ha), while terrestrial (including inland waters) PAs for 97 per cent (491,065.1 ha). Therefore, according to ECE EPR team calculation, the share of terrestrial PAs in the total land area of Albania, which therefore succeeded to reach at least one of the two threshold values (at least 17 per cent of terrestrial and inland water areas) indicating the successful achievement of the CBD Aichi Target 11 in time stipulated by the 2010 CBD Strategic Plan for Biodiversity 2011–2020. As for PA coverage of coastal and marine areas, the achievement of Aichi Target 11 threshold value (at least 10 per cent) cannot be verified, as long as the information on the total size of Albania’s coastal and marine areas is not provided. It should be noted that the above progress should still be perceived as nominal, as Aichi Target 11 requires the conservation of such areas “through effectively and equitably managed, ecologically representative and well-connected systems of PAs and other effective area-based conservation measures and integrated into the wider landscape and seascapes” which cannot be assessed solely on the basis of the spatial extent of areas included into the national PA network.

It should also be noted that the above data might not be accurate, as Albania indicated significant discrepancies between the size of PA territories indicated (gazetted) in official documents, and the results of PA mapping. According to additional information provided in 2020 by Albania, the total area of its 2 strict nature reserves (of IUCN category I) could either be 4,800 ha (gazetted) or almost three times bigger, 12,062.22 ha (mapped). In cases of other national PA categories these disparities are smaller than for SNRs, namely 14 national parks (IUCN cat. II) encompassed either 230,707.40 ha (gazetted) or 245,801.58 ha (mapped), 3 nature monuments (IUCN cat. III) 1,970.00 ha or 1,968.84 ha, 24 managed nature reserves / nature parks (IUCN cat. IV) 151,770.40 ha or 149,002.54 ha, 6 protected landscapes (IUCN cat. V) 97,333.60 ha or 97,256.78 ha, and 4 PAs of managed resources (IUCN cat. VI) either 18,245.00 ha or 18,230.74 ha respectively.

Therefore, the total share of all 53 PAs (probably not counting smaller nature monuments) in the country territory could either account for 17.56 per cent (504,826.30 ha gazetted) or for as much as 18.24 per cent (524,322.70 ha mapped), and the above disparities account for as much as almost 20 thousand ha (19,496.4 ha) or 0.68 per cent of the territory of Albania.

Belarus referred (VNR) to the adopted national legislation, the National Action Plan for the Conservation and Sustainable Use of Biological Diversity for 2016–2020, as well as the other national strategic documents aimed at the development of a system of specially protected natural areas, the conservation and sustainable use of wetlands, peatlands, and the prevention of land degradation.
According to official statistical data concerning Belarus, the value of SDG indicator 15.1.1 (Forest area as a proportion of total land area) increased from 42.52 per cent in 2010 to 43.19 in 2020. As for SDG indicator 15.1.2, the average proportion of KBAs covered by PAs in terrestrial ecosystems increased from 37.17 per cent in 2005 (when its 2EPR was issued) to 47.08 per cent in 2015 (when 3EPR was carried out) and remained at the same level until 2019. As for freshwater ecosystems, the value of SDG indicator 15.1.2 increased from 40.99 per cent in 2005 to 53.31 per cent in 2015 and did not further change either until 2019.

As indicated in sub-section 1.5, the PA in Belarus accounted, as of 2019, for 10.05 per cent of the country’s territory, while the (partly overlapping) Emerald Network for 11.11 per cent.

Bosnia and Herzegovina indicated (2019 VNR) the constant slight growth in the SDG indicator 15.1.1 value, from 54.3 per cent in 2010 to almost 55.2 in 2016 (the 2018 3EPR noted 56.2 for FBiH, and 57.87 for RS).

As for PAs, although SDG indicator 15.1.2 value was not provided, VNR contains information on PAs, incl. a graph (No 17) illustrating trends in the designation of PAs in 2006–2016, for each of the 6 IUCN PA categories. VNR emphasized the progress in the designation of new PAs in RS (only 3 as of early 2011 vs. 23 as of 2018, which accounted for 32,001.12 ha or 1.3 per cent of its territory) and noted 12 PAs in the FBiH, encompassing 84,624.41 ha or 3.24 per cent of the entity territory). Hence, according to 2019 VNR, 20 new PAs were designated in Bosnia and Herzegovina in 2011–2018 (thus within 3EPR reporting period, which begun in 2010 while the information cut-off date was 16 November 2017) which is more than 10 PAs indicated in 2018 3EPR. PAs in Bosnia and Herzegovina included 3 national parks and 3 IUCNs (however such often overlap), and ongoing efforts to expand the PA network in Bosnia and Herzegovina by at least 10 new PAs, in order to achieve the relevant target of the revised NBSAP.

Furthermore, according to the self-assessment on the implementation of the 3EPR recommendations provided in 2020 by Bosnia and Herzegovina, 23 new PAs have been designated in RS since 2012 (thus 3 more than indicated in 2019 VNR), while in 2018–2020 procedures for the proclamation of 5 new PAs in RS (Mokranjska Miljacka, Praca canyon, Tara canyon, Orjen mountain, and Tisina pond) were conducted with the support of the “Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Mainstreaming Biodiversity into Land Use Planning” project coordinated by UNEP and financed by GEF.

As indicated in sub-section 1.5, according to ISNC databases of the two entities (the FBiH, and RS), the PA in Bosnia and Herzegovina accounted, as of early 2021, for 2.89 per cent of the country’s territory (which is the lowest PA coverage among all 3EPR countries).

Bulgaria stated (2020 VNR) that it is the only EU MS where ecosystems were mapped (despite that the new 3.1 version of the Europe-wide ecosystem map covers 39 EEA member countries and collaborating countries), and mentioned (VNR) the country efforts towards building the National Ecological Network (NEN), adoption of 61 action plans for priority species of animals and plants, restoration of riparian and wetland habitats in 10 Natura 2000 sites, as well as provided slightly more update (compared to the 3EPR dated 2017) information on the national PA network, according to which, as at the end of 2018, national PA designations applied to 1,016 areas, encompassing 584,861.5 ha in total (5.3 per cent of the territory), incl. “55 reserves, 35 managed nature reserves, 3 national parks, 11 nature parks, 568 protected areas, and 344 natural monuments”.

322 www.eea.europa.eu/themes/biodiversity/mapping-europes-ecosystems/mapping-europes-ecosystems
According to the FAO Global Forest Resources Assessment 2020 report on Bulgaria, indicated by the country during the self-assessment process, the coverage of forests accounted for "about one third of the country territory or 36% of the territory", or increased from 31.09 per cent in 2000 and 34.42 in 2010 to 35.50 in 2017 and 35.86 per cent of the country territory in 2020.

According to additional information provided in 2020 by Bulgaria on its progress in achievement of SDGs (but Target 14.5), PAs of national categories encompassed 584,530 ha (hence, still 5.3 per cent of the country’s territory, but 331.5 ha less than the area as at the end of 2018, indicated in its 2020 VNR), while the Natura 2000 network consisted of 341 sites, covering 41,554 km² in total, incl. terrestrial N2000 sites (38,728 km², and 35 per cent of the land area) and marine N2000 sites covering 2,827 km² (SCIs 2,482 km², SPAs 550 km², hence partly overlapping).

As indicated in sub-section 1.5, as of 2020, PAs of national categories in Bulgaria accounted for 5.27 per cent, and (partly overlapping) terrestrial Natura 2000 sites for as much as 34.92 per cent of the country’s territory (which results in the highest share of legally PAs in the country’s territory among all 3EPR countries).

**Georgia** mentioned (VNR) the ongoing designation of new PAs, due to which the PA share in the country territory (10.4 per cent as of 2019) was expected to increase to 12 per cent; the progress in the development of the Emerald network since 2008 (including already 58 Emerald sites which together encompass 1,285,974 ha which equals to 18.45 per cent of the country territory), where 44 per cent of the Emerald network was overlapping with the nationally-designated PAs, and 63.5 per cent with the State Forest Fund, and that by the end of 2020 the Emerald Network will be extended by some 5 new sites.

According to additional information provided in 2020 by Georgia on its progress in achievement of SDG Target 15.1, forest area in Georgia accounted for 3.045 million ha, which amounted to 43.5 per cent of the total land area (SDG indicator 15.1.1). For unknown reasons SDG indicator 15.1.2 was referred to as non-applicable ("N/A"), but according to the BIP initiative its value increased from 21.27 per cent in 2010 to 28.38 in 2018. Furthermore, in the self-assessment on the progress in implementation of the 3EPR Recommendation 6.2 Georgia noted that “the network of National Protected Areas and Areas of Special Conservation Interest (ASCI) under Bern Convention are developing annually. Currently both of them cover around 20% of the country area" (the latter meaning the Emerald Network).

As indicated in sub-section 1.5, according to the Agency of Protected Areas of Georgia, as of early 2021 PAs of national categories accounted for 8.38 per cent of the country’s territory, while, according to the Council of Europe its (partly overlapping) Emerald Network accounted, as of December 2020, for 14.60 per cent.

In Appendices to the VNR, Kazakhstan provided values (for 2010, 2015, and 2018) of the SDG indicator 15.1.1. Forest areas a proportion of total land area (growing trend from 4.5 per cent in 2010 to 4.7 in 2018) and national indicator “Proportion of protected areas” replacing SDG indicator 15.1.2 (VNR), showing growing trend (8.8 per cent in 2010, versus 9.6 in 2018).

As indicated in sub-section 1.5, the PA in Kazakhstan (incl. all national category PAs of either republican/national or local significance, and the 4 legally designated and protected ecological corridors) accounted, as of 2019, for 10.84 per cent of the country’s territory.

The Republic of Moldova noted (VNR) that SDG indicator 15.1.1 (forest area as a proportion of total land area) remained unchanged, that forests cover 11.2 per cent of the country’s territory, and that in 2014–2018 PAs encompassed 5.61 per cent of the country territory (hence considerably more than 4.65 per cent reported in 3EPR of 2013), of which 2.22 per cent are Ramsar sites.

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However, the value of SDG indicator 15.1.1 provided in 2020 VNR differs from the values reported in another official statistical source indicated to ECE EPR team. In the course of the 2020 self-assessment the Republic of Moldova indicated its 2020 “Statistics for Sustainable Development Goals” report, where the value of the SDG indicator 15.1.1 (forest area as a proportion of total land area) accounted for 13.7 per cent in 2010 and 13.9 per cent in 2018 (which would then be considerably more than 11.2 per cent reported in the 2020 VNR). The above discrepancy is probably well explained in 6CBD NR, reporting that forest vegetation (as such) covers appr. 450,000 ha (13.7 per cent of territory), while the (actual) forest cover accounted for only 379,300 ha (11 per cent).

The above statistical report also provided the values of the SDG indicator 15.1.2 (proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs, by ecosystem type) for 2010, 2015, and 2018, however this indicator was obviously misinterpreted.

According to 2020 “Statistics for Sustainable Development Goals” report, the overall value of SDG indicator 15.1.2 increased from 4.7 per cent in 2010 to 5.6 per cent in 2015 and 2018, while the value of this indicator for “wetlands of international importance” accounted for 2.2 per cent in all above years. The latter would mean that only 2.2 per cent of Ramsar sites were covered by the national PA categories. However, according to the Ramsar Sites Information Service, Unguri – Holosnita, Lower Prut Lakes, and Lower Dniester sites are all bearing different national PA designations (while the last is considered for the designation as a Lower Dniester National Park).

Therefore, values provided in the above 2020 statistical report did not relate to the proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs (SDG indicator 15.1.2) but to the share of PAs in the country’s territory (5.61 per cent, according to the 2020 VNR) and share of Ramsar sites in the surface covered by PAs (2.22 per cent, according to the 2020 VNR). The actual value of 15.1.2 in 2005–2018 was 23.61 per cent, according to the BIP.

Furthermore, in the course of the self-assessment in 2020, the Republic of Moldova indicated its 2018 6CBD NR which noted that PAs encompassed 210,695.87 ha or 5.8 per cent of the total territory of the country, that the procedure for the proclamation of Nistru de Jos National Park commenced in 2018 (as a result of a project supported by the Austrian Government), and that “objective B of the Biological Diversity Strategy of the Republic of Moldova for 2015–2020 foresees the extension of the state protected natural areas to up to 8% of the territory of the Republic of Moldova (or 270, 770 ha)”. According to ENI SEIS (Shared Environmental Information System) the Republic of Moldova planned the extension of the total area of nationally designated PAs (incl. Emerald Network) to 365 536.8 ha or 10.8 per cent of the country territory.

As indicated in sub-section 1.5, according to the 6CBD NR, the PA in the Republic of Moldova accounted (if properly calculated) for not 5.8 but 6.23 per cent of the country’s territory, while its Emerald Network, according to the Council of Europe, accounted, as of December 2020, for 9.61 per cent.

6CBD NR also noted the creation and reconstruction of ecological corridors and forest strips for the protection of agricultural land and connection of forest bodies, under UNDP project “Integration of Biodiversity Conservation Priorities into Territorial Planning Policies and Land Use Practices in Moldova” (2015–2018).

326 https://rsis.ramsar.org/ris/1500
327 https://rsis.ramsar.org/ris/1029
328 https://rsis.ramsar.org/ris/1316
329 https://bipdashboard.natureserve.org/bip/map.html?ind=PAKBA&iso=MDA
Mongolia referred (VNR) to its revised NBSAP for 2015–2025, the plans to further extend the State Special Protected Area (SPAs) network expected to cover 30 per cent of the country territory by 2030 (thus a considerable planned increase, compared to the current 17.85 per cent, which already encompassed 27.9 million ha), as well as the plans to increase the share of forest areas in the country territory by 2030, to 9 per cent of the total (again a considerable increase, compared to the current 7.9 per cent, which already encompassed 12.28 million ha). In the light of the last number, the statement (VNR) that “forest reserves are decreasing by 200 million ha” must be erroneous (as the total forest area accounted only for 12.28 million ha).

Moreover, in Annex 2 to the VNR, Mongolia provided values of the SDG indicator 15.1.1 (the forest area as a proportion of total land area) was 9.2 per cent in 2015 and 2016 (hence much more than 7.9, and 7.85 in 3EPR) as well as of the SDG indicator 15.1.2 (proportion of important sites for terrestrial and freshwater biodiversity covered by PAs) which accounted for 17.4 per cent in 2015, 17.9 in 2016, versus only 17.8 per cent in 2017; further divided by two particular ecosystem types: growing trend could be observed for PA coverage of forests (30.8 per cent in 2015 and 2016, versus as much as 36.8 in 2017) and ecosystems named “water source and surface water” (44.7 for 2015 and 2016, 44.8 in 2017). It should be noted here, that in the textual VNR part Mongolia mentioned over 400 different sub-ecosystems within 14 natural zones in the country. Furthermore, Mongolia added another indicator “Share of endangered biodiversity, historical and cultural heritage” (covered by PAs) which remained stable during the above mentioned 3 years (80 per cent).

As indicated in sub-section 1.5, according to the 6CBD NR, the PA in Mongolia (including special state PAs and local PAs, but not counting external PA buffer zones which could overlap with local PAs) accounted, as of 2019, for as much as 34.71 per cent of the country’s territory (which is the highest PA coverage among all 3EPR countries).

Morocco in its VNR reported on the forest regeneration and reforestation measures undertaken on the area of approx. 35 thousand ha each year (which resulted in the slight increase in the value of SDG indicator 15.1.1 Forest area as a proportion of total land area from 8.0 per cent in 2015 to 8.06 per cent in 2019), on forest monitoring activities, and on the significant progress in the coverage of forest management plans (for 83 per cent of forests in 2019, compared to 62 per cent in 2015). Morocco referred also to its NBSAP for 2016–2020, and a national 10-year programme for 2015–2024 (continuation of the previous 2005–2014 edition), which priorities include PA management and biodiversity conservation. As for the national PA network, the VNR contained an information that the network of 154 SIBEs encompassed almost 2.5 million ha (such information was missing in the 3EPR, where only the area of 11,471,849 ha covered by national parks and biosphere reserves was mentioned). The 2020 VNR also contains an updated information on the current number of Ramsar sites: 38 (versus only 24 at the time of the 3EPR) and on the establishment of 29 biological reserves of threatened, extinct and reintroduced species. In result, the value of SDG indicator 15.1.2 (Proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs) increased from 8.85 in 2015 to 9.9 per cent in 2019.

As indicated in sub-section 1.5, the aggregated total area of national parks and ‘wildlife reserves’ (according to the 6CBD NR) and 155 SIBEs (which, according to CHM of Morocco, covered almost 1.25 million ha, thus much less than 2.5 million ha indicated in its 2020 VNR) accounted for 4.77 per cent of the country’s territory.

North Macedonia mentioned (VNR) its national network of 86 PAs, the two existing Ramsar sites, and the initiative towards nominating Lake Ohrid as a third one. According to the 2020 VNR by North Macedonia, its national network of 86 PAs covered some 9 per cent of the territory and included: 2 strict nature reserves covering 7,787 ha (0.3 per cent of the country’s territory), 3 national parks (114,870 ha, 4.48 per cent), 67 nature monuments (78,967 ha, 3.0 per cent), 12 nature parks (3,045 ha, 0.12 per cent), 1 protected landscape (108 ha, 0.04 per cent), and 1 multi-purpose area (25,305 ha, which was defined to account for “8.9 per cent of the country”, However, if properly calculated, would only be 0.98 per cent). However,
the above did not inform on the value of SDG indicator 15.1.2 (proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs).

It should be noted here that the above VNR data were outdated, and presented the situation as of 2016, while 3EPR also contained the data for 2017, hence, more update than available in the 2020 VNR.

North Macedonia reported in its VNR on the identification of potential future Natura 2000 sites (since 2015), and on the designation of five new "natural rarities" in 2019. The share of forests as a proportion of total land area (SDG indicator 15.1.1) accounted either for 43 per cent (VNR) or only 39 per cent (VNR), while the other wooded lands covered further 16.8 per cent of the country territory. In the Statistical Annex to its VNR North Macedonia provided values of SDG indicator 15.1.1 between 2010 and 2018 (fluctuating, but slowly increasing trend, 37.4 per cent in 2010 versus 39.2 in 2018).

Furthermore, in the course of the self-assessment in 2020, North Macedonia noted that its national PA network covered about 8.9 per cent of the country’s territory (incl. 4.48 per cent covered by the 3 national parks). Moreover, the procedures for proclamation and re-proclamation of PAs and natural rarities continued, valorisation or revalorisation studies of natural heritage and PAs have been prepared for Šar Mountains and Osogovo Mountains (as part of the PA designation procedure for both above areas), Vodno, NP Pelister, Dojran Lake, Studenchishte Swamp and Chengino Kale.

As indicated in sub-section 1.5, according to 3EPR the PA in North Macedonia accounted, as of 2017, for 8.93 per cent of the country’s territory. The above information could not be updated for the purposes of this assessment, as the 2020 VNR of North Macedonia, the 2020 6CBD NR by North Macedonia, and the official Ministry of Environment and Physical Planning website (last accessed in May 2021) all presented outdated information on PAs (as of 2016).

As for the preparations for the Natura 2000 network formation, North Macedonia noted that 8 potential Sites of Community Importance (SCIs) under the Habitats Directive, and 3 potential Special Protected Areas (SPAs) under the Birds Directive have already been identified, the identification process continued further, in particular in the eastern part of the country (it should be noted that more detailed information on the above preparatory works, mentioning names of the above potential 8 SCIs and 3 SPAs, and the number of potential sites in the eastern part of the country was already available in 3EPR). Moreover, 2 Natura 2000 management plans have been drafted in North Macedonia, for Prespa Lake Monument of Nature and NP Pelister.

Romania noted in its VNR that the area covered by forests accounted for some 6,565 thousand ha, thus 27.5 per cent of the territory, where almost a half of forests has been managed for “watershed conservation” rather than commercial purposes, and that 47 per cent of the country’s land area was covered with natural and semi-natural ecosystems. VNR provided detailed information on the number and total area of different national categories of PAs, Natura 2000 sites, and PAs of “international interest”. National designations included 79 scientific reserves (total area of 100,574 ha), 13 national parks (315,857 ha), 190 natural monuments or feature (18,220 ha), 671 nature reserves (136,537 ha), 14 natural parks (737,428 ha).

According to VNR, PAs of the above national categories encompassed 7 per cent of the country area, which is incorrect, as these 1,308,616 ha in total accounts, if properly calculated, for only less than 5.49 per cent. Furthermore, the VNR provided slightly inconsistent information on some 606 or 613 Natura 2000 sites, including 435 or 442 Sites of Community Importance (SCIs, of the total area of 4,031,100 ha) and 171 SPAs (3,649,300 ha), where VNR provided a higher number of SCIs (442 vs. 435 respectively), the share of which in the country territory is reported as 25 per cent (VNR), which value might again be incorrect, although SCIs and SPAs can spatially overlap.

As indicated in sub-section 1.5, according to the National Agency for Natural Protected Areas (NANPA) website, the PA in Romania accounted, as of early 2021, for 5.85 per cent of the country’s territory (in case
no spatial overlaps between different PA categories occur). According to 3EPR, terrestrial Natura 2000 sites cover 22.7 per cent of the country's territory.

Moreover, VNR mentioned 3 UNESCO MAB Biosphere Reserves: Danube Delta, Retezat, and Pietrosul Rodnei (the proper name of the last is Pietrosul Mare\textsuperscript{332}), according to VNR jointly encompassing 664,446 ha (which is again an incorrect value, as according to UNESCO these 3 BRs cover 765,047 ha of the Romanian (terrestrial and marine) territory, and 19 Ramsar sites of the total area of 1,156,448 ha (according to the Ramsar Sites Information Service\textsuperscript{333} the correct number, as of 2018, would be 1,156,368). Surprisingly, the 2 World Heritage “natural criteria” properties were not mentioned in the VNR in the context of these “PAs of “international interest” in VNR of Romania mentioned also the Geoparks management.

However, it should be noted that in its VNR Romania comprehensively elaborated e.g., on its ecosystems and species diversity, as well as major threats and pressures, and detailed assessments of trends in the conservation status of habitats and species (also for different biogeographical and marine regions, and by habitat category and species group), and a number of measures implemented towards the achievement of Target 15.1 (despite that never explicitly referred to in the whole VNR).

**Serbia** provided (in statistical annex to its VNR) two values of SDG indicator 15.1.1 (forest area as a proportion of total land area), with a slight increase from 31 per cent in 2010 to 31.1. per cent in 2015.

According to the 2019 6CBD NR by Serbia, the value of SDG indicator 15.1.1 depends on the method of remote sensing and imaging used: according to CORINE Land Cover for 2018 the area under forest in Serbia (excluding the territory of the Autonomous Province of Kosovo and Metohija) was 2,380,917 ha (30 per cent of the country’s territory), while according to SPOT5 satellite images the above area accounted for 2,654,000 ha (some 35 per cent), hence the value of SDG indicator 15.1.1 significantly differed. Moreover, in the next sentence, 6CBD NR refers to SPOT5 satellite images made in 2020/2011 and states “the area under the forest is 31,956 km\textsuperscript{2}, which represents about 36 % of the territory of Serbia”, which information is not consistent with the previously quoted measurements (2,654,000 ha and 35 per cent vs. 3,195,600 ha and 36 per cent of the total territory).

As for PA coverage, 6CBD NR by Serbia described the national PA categorization system and the PA proclamation procedures, noted that the PA network which included 459 PAs of 8 national categories (strict natural reserve, special natural reserve, national park, natural park, natural monument, protected habitat, protected landscape, and landscape of exceptional characteristics) encompassed in total 673,835 ha (7.61 per cent of the country's territory), including 6,416 ha designated in 2018.

The total surface of PAs matching the IUCN categorisation accounted for 410,798 ha. According to Fig. 2.1.1.1. the share of IUCN category I (strict nature reserves, and wilderness areas) PAs remained at the 0 per cent level (which could indicate that PAs of the “1\textsuperscript{st} degree of protection regime” were counted as part of PAs of the other IUCN categories), while between 2010 and 2018 the share of IUCN category II (national park) increased from 14 to 22 per cent, category IV (habitat or species management area) decreased from 37 to 25 per cent, category V (protected landscape or seascape) increased from 44 to 51 per cent.

6CBD NR noted that, according to national legislation, all sites with finalized studies concerning their protection, even if not yet formally designated, are considered in Serbia as PAs, and that “Institute for nature conservation of Serbia and Provincial institute for nature protection prepared studies of protection and revision for 89 more protected areas, total surface 110 030 ha. So we can consider total protected area represents 8.82 % of total territory of Serbia”. 

\textsuperscript{332} https://en.unesco.org/biosphere/eu-na/pietrosul-mare

\textsuperscript{333} https://rsis.ramsar.org/
However, 6CBD NR did not clarify how many of the above 89 PAs were the newly proposed ones, nor explain why the surface of PAs where such studies were only revised (hence, concerning already designated PAs) shall increase the previously given total PA network area, and PA share in the country’s territory. Moreover, 6CBD NR noted that “The ecological network of Serbia is comprised of 101 areas and it represents an assembly of functionally connected or spatially close ecologically significant areas” while the above number is not matching the information on 459 PAs in the country. 

As indicated in sub-section 1.5, according to the Central Register of Protected Natural Resources, the PA in Serbia accounted, as of early 2021, for 7.67 per cent of the country’s territory. 

Furthermore, 6CBD NR noted that 61 sites have been nominated for the Emerald Network of Areas of Special Conservation Interest (related to the Bern Convention on the Conservation of European Wildlife and Natural Habitats), that 42 Important Bird Areas (IBAs) were identified in 2009, encompassing the total area of 1,259,624 ha (which accounted for 14.25 per cent of the country’s territory), 40 PBAs of the total area of 903,643 ha (10.2 per cent), and 62 IPAs covering in total 747,300 ha (8.5 per cent of the territory). Hence, it should be noted that, taking into account that the national PA network covers only some 7.61 to 8.82 per cent of the country’s territory, not all IBAs or PBAs were included. 6CBD NR mentioned also the proposed Prime Hoverfly Area outside of the Nationally Protected Area, expected to cover 1.36 per cent of the national territory of Serbia.

**Tajikistan** mentioned only (VNR) that “the system of monitoring for the record of qualitative and quantitative indicators of the state of biodiversity is still missing”.

As indicated in sub-section 1.5, according to the 6CBD NR (submitted in 2019), the PA in Tajikistan accounted for 21.9 per cent of the country’s territory (of which 18.25 in one PA, Tajik state nature park).

**Uzbekistan** reported (VNR) that the value of SDG indicator 15.1.1 increased from 6.5 per cent in 2015 to 7.1 in 2018, and mentioned its Forestry Development Program 2020–2024, and the Strategy for the Conservation of Biological Diversity for the period 2019–2028. Further Uzbekistan mentioned its future challenges (well corresponding to 3EPR recommendations), related to combating the desertification of the Aral Sea zone, need for the improvement of the environmental monitoring system, and the objective to increase the total forest area by 6,750 thousand ha by 2030 (which would then require conducting afforestation works on 295.7 thousand ha per year, or achieving 4.4 per cent annual increase of the total forest area).

As a result of the self-assessment of the implementation of the 3EPR recommendations carried out in 2020, Uzbekistan noted that (in accordance with 3EPR Recommendation 11.3) external protective buffer zones for 3 PAs (Gissar, Kitab and Surkhan SSNRs) have already been established (pursuant to 2019 Resolution of the President No. 4247), while the establishment of buffer zones for 4 other PAs (Chatkal, Kyzylkum, Nurata, and Zaamin SSNRs) is planned for the end of 2020. Moreover, Uzbekistan noted that a draft resolution of the Cabinet of Ministers “On the formation of the state reserve” Sudochye-Akpetki “in the Republic of Karakalpakstan has been prepared, and that the draft resolution “On approval of the Program for the creation and expansion of the system of protected natural areas in the Republic of Uzbekistan until 2028” has been prepared and was already at the stage of agreement with the interested ministries and departments.

As indicated in sub-section 1.5, the recent designation of Southern Ustyurt nature park encompassing 1,447,143 ha (which can be deduced from the information published by UNESCO on the proposal submitted by Uzbekistan on 29 January 2021, concerning the nomination of its national part of the planned ‘natural’ World Heritage transnational property “Cold winter deserts of Turan") resulted in an increase of PA, which accounts, as of early 2021, for 7.88 per cent of the country’s territory. This assessment does not perceive PAs of national category VII – territories for the management of individual natural resources, which encompass almost 24.78 per cent of the country’s territory, as PAs, due to the fact that this category is attributed to all state forest fund lands (71 per cent of which are not yet forests, but forestry plantations,
areas under afforestation works, or pastures and open areas perceived as potentially suitable for afforestation) and the lands of hunting farms (which designation purpose is by definition different than nature conservation).

Conclusions:

Target 15.1 achievement can properly be assessed on the basis of VNRs only for Kazakhstan, Mongolia, Morocco, North Macedonia, the Republic of Moldova (which duly provided the values of both SDG indicators), and in particular for Romania, which provided the most comprehensive description of its relevant activities.

Nevertheless, the progress in forest management, reforestation and afforestation works is notable in the case of Bosnia and Herzegovina, Kazakhstan, Morocco, North Macedonia, and Uzbekistan. The progress in PA management and PA network extension shall be noted in Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Morocco, and the Republic of Moldova.

In addition to VNRs (often presenting more update information that available at the time of their 3EPRs), quite important was the information provided by several 3EPR countries in the course of the self-assessment in 2020.

Surprisingly, Albania which partly reached threshold values for the achievement of the CBD Aichi Target 11 (as the share of terrestrial PAs in the total country’s territory accounted, as of 2020, for no less than 17.08 per cent of its land area) has neither mentioned this fact in its 2018 VNR, nor in the information provided to the ECE EPR team in 2020.

According to the information provided to ECE EPR team in 2020, since 2013 Bosnia and Herzegovina designated as many as 23 new PAs and is planning to further extend their network, including the prepared proclamation of 5 new PAs in RS.

According to 3EPR, Bulgaria is among the European countries with the highest territorial share of Natura 2000 sites (34.4. per cent vs. 18 per cent average for EU), encompassing more than 4 million ha of the country.

Surprisingly, Kazakhstan which has effectively implemented the concept of the ecological network, including the designation in 2014–2018 of 4 legally protected ecological corridors, encompassing the total area of almost 3.3 million ha (furthermore, not accounted as PAs, which would then increase the PA coverage from 8.94 to almost 10.15 per cent of the country’s territory) and planned further extension of its PA network, has neither mentioned this best practice example, nor elaborated on the achievement of Target 15.1 in its VNR.

Similarly, the Republic of Moldova with the support of UNDP implemented a project on the creation and reconstruction of ecological corridors and forest strips for the protection of agricultural land and connection of forest bodies (which could be a good practice example for the other 3EPR countries) but did not mention it in its VNR.

North Macedonia progressed with the proclamation and re-proclamation of PAs, including preparatory studies for the designation of Šar Mountains and Osogovo Mountains as new PAs.

Another good practice identified above is the legal protection granted by the national legislation of Serbia to all sites for which the studies justifying their future protection as PAs have been finalized, even prior to their formal designation (while similar protection for areas under long-lasting proclamation or re-proclamation procedures in North Macedonia was, according to the 2004 Law on Nature Protection, only temporary, limited to one year, with all possible negative consequences).
Uzbekistan progressed towards the achievement of Target 15.1 by the designation of PA external protective buffer zones, following the 3EPR Recommendation.

**Comparison of results of the 3EPRs and VNRs analysis:** as for the achievement of Target 15.1, the situation presented in VNRs, and additional information provided in 2020 to the ECE EPR team seems to be more promising than described in 3EPRs of several countries.

**Target 15.2**

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.

Please note, that the SDG Target 15.2 corresponds with the Aichi Biodiversity Target 5 “By 2020, the rate of loss of all-natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced”.

- Indicator 15.2.1 Progress towards sustainable forest management

**Methodological remarks**

In the opinion of the author of this assessment, SDG indicator 15.2.1 is not suitable for several 3EPR countries in focus, and quite complex, while the data necessary for its computing is not always available. This indicator is composed of five sub-indicators (concerning the annual net change rate of the forest area, the above-ground biomass stock in forest, the coverage of forest area by PAs, the share of forest areas with a valid long term management plan, and the certified forest area). Nevertheless, as explained in the indicator methodology, even the above five sub-indicators do not fully cover all aspects of sustainable forest management.

Moreover, the definitions of terms used in sub-indicators (aimed at unifying and harmonizing methodological approaches at the global scale) do not take into account quite different environmental circumstances in particular regions. For example, the basic term “forest” is defined as “Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ”. It should be noted that, while such definition is proper for e.g., temperate broadleaf and mixed forests (occurring in e.g., Belarus, Bulgaria, or Bosnia and Herzegovina), but automatically excludes e.g., saxaul desert and steppe, or juniper “archa” mountain forests, and part of hard-leaved xerophytic light forests (incl. pistachio and almond trees), which are forest types often covering a prevailing or at least a significant part of all forest areas in e.g., Kazakhstan, Mongolia, Uzbekistan, and Tajikistan, as well as the argan forests in Morocco, stretching over some 828,000 ha.

Last, but not least, SDG indicator 15.2.1 can only be calculated for countries which have data complete time series, sufficient for calculating each of its five components, while simultaneously there is no weighting of the relative importance of particular sub-indicators in the final indicator value.

**Coverage of Target 15.2 in 3EPR reports (since 2017)**

The progress towards the achievement of Target 15.2 was evaluated in SDG-related boxes of the 3EPRs for all 6 countries, as well as in the draft 3EPR of Romania, but never with the use of the SDG indicator 15.2.1, always in a descriptive manner, by referring only to some selected issues (most probably due to limited data availability, or the incompatibility of the indicator with the local understanding of forest areas).

**Target 15.2 achievement on the basis of the 3EPRs**
3EPR SDG-related box for Albania noted the recently launched national forestry inventory works, and reforestation efforts, significantly intensified since 2013, and carried out on the area of 800,000 ha. However, such would not yet compensate the loss and degradation of forests throughout the previous three decades. Moreover, no forest certification scheme was in place.

The SDG-related box in 3EPR Chapter 12 for Bosnia and Herzegovina noted that 22.9 per cent of forest areas was FSC certified, and 42.7 per cent was being prepared for certification in the FBiH, while RS had 982,203 ha of certified forest areas (which, according to Chapter 12, would then almost equal to the size of the total forest and forestland area in this entity in 2011, and account for almost 64.37 per cent of the above area in 2006–2009, in case the given numbers were not erroneous). Another SDG-related box on Target 15.2 (in 3EPR Chapter 11 on biodiversity and PAs) noted that forests cover 2,709,769 ha, or about 53 per cent of the total land area (which is in fact the value of SDG indicator 15.1.1, missing in Target 15.1 box), that both entities either developed or adopted relevant strategic documents concerning forestry development, and that the most urgent priorities were the preparation of sustainable forest management plans and establishment of fire management systems.

3EPR SDG-related box for Kazakhstan emphasized that all forest in the country were well protected and sustainably managed, that the deforestation process has successfully been halted, and that intensive forest ecosystems regeneration and restoration, afforestation and reforestation works were carried out. Hence, in case of Kazakhstan SDG Target 15.2 can be achieved (if not yet by 2020, at least in the near future).

As for Mongolia, its SDG-related box in EPR Chapter 13 (on forestry and environment) mentioned the principles of the 2015 State Policy on Forests, the recently completed Multi-Purpose NFI (2014–2016), the ambitious goal to increase the area of closed forest from the current 7.85 per cent of the country territory to 8.3 per cent by 2020 and 9.0 per cent by 2030, the resulting Government’s priority on reforestation and afforestation activities, the implementation of the Green Belt National Programme in the Gobi Desert (aimed also at the mitigation of desertification and sand movement), planned establishment of a national standard for certification of forest organizations aligned with international standards by 2020, and related capacity-building training to forestry professional organizations, provided by the Council of Sustainable Forest Management, cooperating with the Programme for the Endorsement of Forest Certification (PEFC) on the introduction of an independent third-party forest certification scheme.

3EPR SDG-related box for North Macedonia mentioned the ongoing implementation of the 2006 Strategy for Sustainable Development of Forestry, but also the lack of reports on the progress in the above, and the general lack of data on forest resources, due to the absence of the NFI and non-operational forest monitoring system. However, the box also noted the endorsement of the national forest certification system within the PEFC, and noted that, according to official reports, forest management plans were in place for some 92 per cent of the forest area (90 per cent of which is managed by the Public Enterprise “Macedonian Forests”).

According to Chapter 11 of the 3EPR of Romania, this country is on track in achieving the SDG target 15.2, which was further justified by analysing the forest area annual net rate change, considerably increasing above-ground biomass stock in forest (107.0 tons/ha in 2010 vs. 207.5 tons/ha since 2016, which therefore almost doubled over only 6 years, if the above data are accurate), as well as considerable increase in the forest area subject to independently verified certification scheme (914,680 ha in 2010 vs. 2,728,310 ha in 2018) which therefore indicated visible progress towards sustainable forest management.

In Uzbekistan all forests were classified as protective forests, therefore well protected and sustainably managed (no commercial timber harvesting is allowed, except for sanitary fellings). According to the 3EPR SDG-related box, the deforestation process has been halted, and intensive afforestation works were carried out (in particular in the dried bottom of the former Aral Sea). However, the data on forests is generally lacking, due to the absence of the national inventory of forests (last carried out in 1987).
Conclusions:

Target 15.2 achievement can properly be assessed on the basis of the 3EPRs for all 7 countries (despite that the values of the corresponding SDG indicator has never been provided), moreover with positive results.

Kazakhstan seems to be quite close to the successful achievement of Target 15.2. The certification of forestry operations was ongoing in Bosnia and Herzegovina and Romania and was in preparation in Mongolia and North Macedonia. The moratorium on forest logging for industrial purposes and the export of timber (except for fuelwood used by local communities) was adopted in Albania for 2016–2025, Uzbekistan also prohibited commercial timber harvesting.

However, the absence of a NFI can be a serious impediment for planning the sustainable use of forests in North Macedonia and Uzbekistan (which might also still be true for Albania if the inventory works had not yet been completed).

Resulting recommendation for the fourth EPR cycle:

The assessment of the progress made towards the sustainable management and restoration of forests, halting deforestation, as well as increasing afforestation and reforestation measures should possibly be conducted under the future fourth EPR cycle of all reviewed countries, but in particular for Albania, North Macedonia, and Uzbekistan.

Coverage of Target 15.2 in Voluntary National Reviews

Albania reported in 2018 that the alignment of SDG15 Targets was partial (25-50%, VNR). Albania, Bulgaria, Morocco, the Republic of Moldova, and Romania briefly described their progress relevant to the achievement of Target 15.2, Kazakhstan provided 2 national indicators, Serbia provided 1 SDG indicator (in statistical Annex).

Belarus, Bosnia and Herzegovina, Georgia, Mongolia, Montenegro, North Macedonia, and Serbia did not refer to Target 15.2 (Uzbekistan only mentioned planned afforestation activities).

Target 15.2 achievement on the basis of VNRs and additional information provided in 2020 by countries

Albania noted (VNR) that the Parliament adopted in February 2016 a ten-year moratorium on forest timber exploitation for business purposes, with the purpose to reduce negative impacts of overexploitation of the country’s forest resources.

According to additional information provided in 2020 by Albania on its progress in achievement of CBD Aichi Targets, in 2019 the country approved a new strategy on forests, in early 2020 adopted the new Law on Forests, and established a new National Forests Agency.

According to additional information provided in 2020 by Belarus, the above-ground biomass stock in forest increased from 114.6 tonnes per ha in 2000 to 135.8 in 2010 and 156.1 in 2020 (hence, by 36.2 per cent over the last 20 years), which indicates the constantly growing volume of timber standing stock as a result of sustainable forestry practice. In 2000–2015 the share of areas under long-term forestry management plans increased from 95.8 to 100 per cent and remained at the same level until 2020. The forest area under an independently verified forest management certification scheme initially increased, from 106,400 ha in 2005 to 9,404,565 ha in 2015, and since then slightly decreased, to 9,250,703 ha in 2019 (thus, by only 153,862 ha).

Bulgaria noted (VNR) e.g., the National Strategy for the Development of the Forestry Sector in Bulgaria 2013–2020 and the Strategic Plan for the Development of the Forestry Sector 2014–2023, elaborated in
accordance with internationally valid criteria and indicators for sustainable forest management, where forest management plans and programs set the permissible level of use of forest resources and guidelines for the achievement of forest management goals for a period of 10 years. Moreover, the Law on Forestry prohibited the reduction of the overall percentage of forest land in the country and was extremely restrictive in terms of changing the designation of forest territories.

According to the FAO Global Forest Resources Assessment 2020 report on Bulgaria, indicated by the country during the self-assessment process in 2020, the share of forest area under long-term forest management plan increased from 84.27 per cent in 2000, 93.79 in 2010, and 96.35 in 2017 to 97.39 per cent in 2020. Also, the forest area under independently verified forest management certification schemes (not yet applied in e.g., 2000) increased, from 303,580 ha in 2010, 706,650 in 2015 to as much as 1,290,200 in 2017 and 1,483,380 ha in 2018.

However, the range of reforestation works per year significantly decreased, from 29,710 ha in 1990 or 6,310 in 2000, to only 1,730 in 2010 and 1,500 ha in 2020 (table 1e Annual reforestation). This decreasing trend was particularly visible in state-owned forests (which accounted for some 75 per cent of the total), mostly caused by the lack of financing, low wages and resulting limited availability of the forestry workers. In result, the total reforested area decreased from 126,590 ha in 1990–2000, and 55,780 in 2000–2010 to only 7,110 in 2010–2015 and 11,440 ha in 2015–2020 (it should be noted that the unit “1000 ha/year” indicated in this table is misleading, as the numbers correspond to the total for the period, not the amount per year).

According to the self-assessment on the implementation of the 3EPR recommendations provided in 2020, Georgia adopted its new Forest Code in 2020, including forest stand categorization based on their functional assessment, which includes protected, protective, recreational, and utilized forests categories. Currently the country is working on the development of the subsidiary legislation, and endorsement of Sustainable Forest Management Criteria and Indicators.

In Appendices to the VNR, Kazakhstan provided (VNR) values (for 2010, 2015, and 2018) of the SDG indicator 15.2.1. disaggregated into two national indicators of “Forest area” (growing trend) and “Land-based biomass reserves in forests” (growing trend).

The Republic of Moldova noted (VNR) that the share of forests in its total land area remained unchanged (11.2 per cent) between 2014 and 2018, despite that 2,180 ha of degraded lands were afforested in 2014–2016. Hence, despite that the volume of harvested timber was reported as offset by forest planting, also the afforestation results were offset by the felling of trees. Further expansion of afforested areas was reported as hardly feasible, due to the small share of state-owned land (which might indicate that sound incentives for the afforestation of the prevailing privately owned lands were either non-existing or not yet sufficient).

In 2020, in the course of the self-assessment the Republic of Moldova indicated its 2020 “Statistics for Sustainable Development Goals” report, and its 6CBD NR. The above statistical report shows the fluctuating (but increasing) trend in the scope of forest restoration works, from 2,743 ha in 2010 to 5,239 in 2014 and 4,853 ha in 2018. 6CBD NR noted that in 2010–2018 “the total 12,583 ha of new forestry plantations were created, including 9,478 ha in the state forestry fund and 3,060 ha outside the forest fund” (However, 9,478 + 3,060 = 12,538, not 12,583), that in the State Forestry Fund the forest regeneration works were applied to some 3 to 5 thousand ha per year, that such works carried were out by the Moldsilva Agency in 2011–2016 on 26,069 ha, and that the scope of reforestation works in the state forestry fund accounted for some 100 ha annually.

Morocco referred (VNR) to the national ten year programme for 2015–2024 (which priorities include fighting fires, and the conservation and rehabilitation of forest ecosystems), the “Forests of Morocco 2020–2030” strategy, adopted with the objective to stop deforestation and rehabilitate forest areas which degrade over the past 30 years (including the implementation of the participatory approach for forest management), and the national development strategy for oasis and argan areas aimed at the rehabilitation of 200,000 hectares of argan (endemic Argania spinosa trees) forest and 48,000 hectares of palm grove, as well as planting 17,000 ha of new palm groves.

Romania noted that almost a half of its forests is mainly managed for “watershed conservation”, and that the country has one of the largest areas of undisturbed forest in Europe (in particular those in the Carpathian Mountains). VNR mentioned the ongoing identification and inventorying of particularly valuable forest ecosystems for their inclusion into the National Catalogue of Virgin and Quasi-Virgin Forests (already containing records on over 14 thousand ha of forests) for ensuring their protection, as well as the inclusion of 12 sites into the transnational UNESCO World Heritage “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe” property (to which Romania contributed with 12 sites totalling for 24 thousand ha, and 64.5 thousand ha area of the buffer zone).

Measures concerning the sustainable management of forests were mentioned on VNR, incl. e.g., the functional zoning of forests (incl. 56 functional categories, corresponding to different protection functions, which were therefore assigned to specific management modes), the implementation of the Information System for Timber Flow Control and for Tracking the Wood Source (SUMAL), as well as economic incentives - state subsidies and compensations paid to private forest owners. On VNR Romania mentioned numerous direct threats to its forests (“terrain conversion, infrastructure development, the development of human settlements, hydro-technical constructions, overuse of natural resources, inadequate use of unsustainable resources, invasive species, climate change and extensive contamination due to pollution.”). According to the statistics, in 2009–2016 an area of 7,912 ha of degraded land was afforested and forest protection belts were planted on further 568 ha (hence, the scope of afforestation works throughout these 7 years was rather limited in Romania, accounting for some 1,211 ha per year in average).

In 2020, in the course of the self-assessment Serbia indicated its 6CBD NR, according to which already 100 per cent of public forests managed by the public enterprises Srbijašume and Vojvodinašume (834,439 ha and 128,789 ha respectively) were certified through the FSC, while forests administered by national parks and forests not owned by the state were not involved in any certification schemes.

Tajikistan reported (VNR) that the area of forests “has grown and exceeded the level of 2006”, which was further illustrated by a diagram (VNR) showing the slightly growing trend in the total size of forest areas between 2006 and 2014, where the (equal) values for 2011 and 2012 constituted the baseline 100 per cent, and where the range of values fluctuated from 99.6 per cent in 2006 to 101.3 per cent in 2013 and 2014 (thus a range of 0.7 per cent of the baseline value), but provided no further, more exact details.

Conclusions:

Target 15.2 achievement can properly be assessed on the basis of VNRs probably only for Albania, Bulgaria, and Morocco; but with positive results in all three cases.

According to additional information provided in 2020 by countries, two other 3EPR countries significantly progressed towards the achievement of Target 15.2, namely Belarus (where 100 per cent of forest areas remain under long-term forestry management plans since 2015, and almost all forests are under an independently verified forest management certification scheme) and Serbia, where all public forests are FSC-certified. Surprisingly, neither Belarus nor Serbia referred to Target 15.2 in their VNRs.

Comparison of results of the 3EPRs and VNRs analysis: surprisingly Kazakhstan (which, accordingly to its 3EPR, is close to the successful achievement of Target 15.2) and Mongolia (well progressing) did not further elaborate their VNRs in this respect.
Target 15.3

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

- Indicator 15.3.1 Proportion of land that is degraded over total land area
  

Coverage of Target 15.3 in 3EPR reports (since 2017)

The progress towards the achievement of Target 15.3 was evaluated in 3EPR SDG-related boxes for five out of six countries (except for Uzbekistan, where desertification and land degradation have extensively been covered under several 3EPR Chapters), as well as in the draft 3EPR of Romania, however the value of the SDG indicator 15.3.1 was available only for Mongolia and Romania (plus preliminarily estimated value for Uzbekistan).

Target 15.3 achievement on the basis of the 3EPRs

The 3EPR of Albania noted in the SDG-related box on the estimated values of soil losses caused by erosion, adoption of the National Action Programme to Combat Desertification in 2016 (but with no details on its implementation), and the UNEP/GEF funded project supporting soil restoration activities.

The 3EPR SDG-related box for Bosnia and Herzegovina mentioned only several economy sectors responsible for land degradation (in particular agriculture, industry, forest management, the energy sector, urbanization and traffic), later refers to FSC certification of state-owned forests (which is much less relevant to Target 15.3 and has already been mentioned in box concerning Target 15.2 in another 3EPR Chapter) and the implementation of the EU IPPC Directive (concerning industrial integrated pollution prevention and control).

As for Kazakhstan, the SDG-related box noted ongoing intensive works in order to mitigate desertification and restore degraded forest and steppe ecosystems, as well as the dry bottom of the Aral Sea. In order to mitigate the degradation of pastures (some 14.51 per cent of pastures were classified as degraded in 2012) and enhance their sustainable use the Government adopted the Law on Pastures (imposing obligatory pasture rotation), enforcement of which can gradually improve the state of pastures and facilitate partial achievement of Target 15.3 by 2030.

The value of the SDG indicator 15.3.1 for Mongolia accounted for as much as some 76.8 per cent (including 24.1 per cent slightly degraded, 29.8 per cent moderately degraded, 16.8 per cent severely degraded and 6.1 per cent very severely degraded land area). Due to the above, Mongolia has already set a national target under SDG Target 15.3, with the objective to restore no less than 70 per cent of degraded land and decrease the area of desert land to 60 per cent of total country territory by 2030. The legal, policy and institutional mechanisms for combating land degradation were already in place, incl. the 2012 Law on Soil Protection and Desertification Prevention, and the 2010 National Action Programme to Combat Desertification for 2010–2020. Moreover, a national network for monitoring the land degradation and desertification has been established. However, the limited capacities, financial resources, and inadequate horizontal coordination among the relevant sectors impeded the implementation the Programme.

The 3EPR SDG-related box for North Macedonia only stated that the value of the SDG indicator 15.3.1 has been calculated “only for the land covered by forests, where degraded forests account for over 4 per cent of the total forest area”. Hence, it is not clear whether the above value relates to degraded land, or degraded forests.

The 3EPR of Romania noted that according to the estimates in the 2018 first report by Romania (for the period 2000–2015) some 2 per cent of the total land was degraded (SDG indicator 15.3.1). However, as
the next reporting cycle will cover subsequent four years (i.e., 2019–2022) and the report is expected to be published in 2023, it is hard to assess the progress in achievement of the target 15.3 in the absence of adequate data for comparison. Chapter 6 elaborated on the 2000 National Action Plan to Combat Desertification (with a timeframe up to 2025), which planned measures include e.g., afforesting eroded soil on an area of 700,000 ha (out of which 115,000 in areas affected by desertification) and afforesting an area of 15,000 ha, but the pace of implemented afforestation works was comparatively slow, despite the increase from 100 ha in 2000 to around 1,500 ha in 2019.

For Uzbekistan the processes of desertification and land degradation were (and still are) a major environmental and economic challenge, also due to the fact that desert and steppe ecosystems encompass as much as 85 per cent of the country’s territory. The 2019 preliminary assessment mentioned in 3EPR indicated that some 26 to 28 per cent of the total of the country (SDG indicator 15.3.1) has been affected by degradation (in particular in the region of the former Aral Sea, but also the Ustyurt Plateau, Kyzylkum Desert and mountainous and sub-montane regions). Hence, the country adopted the voluntary Land Degradation Neutrality target “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”, as well as the Comprehensive Programme of Measures related to Mitigation of the Consequences of the Aral Disaster, Rehabilitation and Socio-Economic Development of the Aral Sea Region for the period 2015–2018 (in 2019 the subsequent national action plan was prepared).

Uzbekistan carries out large-scale measures aimed at land reclamation and stabilization of soils of the dried bottom of the former Aral Sea, in order to prevent and mitigate the adverse effects of frequently occurring storms, carrying salt, sand and dust, which also enhanced desertification processes in other regions. Land reclamation works include afforestation and planting desert vegetation, fixing moving sand of the seabed and absorbing salt. Between 2010 and 2018, forest plantations were established on 144,691 ha of the exposed seabed. In 2018 the Government decided to plant over 500,000 ha of forest vegetation in the period 2019–2021, however already by the end of March 2019 an area of 720,000 ha had been prepared for planting, and some 400,000 ha of forest plantations had been established.

Conclusion:

Target 15.3 achievement can properly be assessed on the basis of the 3EPRs only for the most affected 3 out of 7 countries in focus: Kazakhstan, Mongolia and Uzbekistan, with positive results in all 3 cases. However, the efforts towards the achievement of Target 15.3 by Mongolia were hampered by the lack of available funding.

Resulting recommendation for the fourth EPR cycle:

The assessment of the progress in combating desertification and restoring degraded land and soil should possibly be conducted under the future fourth EPR cycle of all reviewed countries (hence, not only the currently most affected Kazakhstan, Mongolia and Uzbekistan), as the adverse effects of climate change will probably further enhance the desertification and land degradation processes in a growing number of countries.

Coverage of Target 15.3 in Voluntary National Reviews

Mongolia and Morocco comprehensively described their progress towards the achievement of Target 15.3. Belarus, Bulgaria, North Macedonia, Republic of Moldova, Romania and Tajikistan provided much shorter explanations, Serbia mentioned the national legal act. Mongolia provided the value of the SDG indicator 15.3.1, while Kazakhstan provided the value of its national indicator.

Albania (which reported in 2018 that the alignment of SDG15 Targets was partial), Bosnia and Herzegovina, Georgia, and Montenegro did not refer to Target 15.3 (while Uzbekistan only mentioned the challenge of combating the desertification of the Aral Sea zone).
Target 15.3 achievement on the basis of VNRs and additional information provided in 2020 by countries

Belarus referred (VNR) to the national strategic documents aimed at the prevention of land degradation.

Bulgaria mentioned (VNR) that the National Action Program for Sustainable Land Management and Combating Desertification in the Republic of Bulgaria (Update for the Programming period 2014–2020) has been adopted, and that the Environmental Executive Agency conducts annual monitoring on land at risk of degradation.

According to the FAO Global Forest Resources Assessment 2020 report on Bulgaria, indicated by the country during the self-assessment process, the rate of afforestation in state-owned forests (which accounted for some 75 per cent of the total forest area) due to the lack of financing, low wages, absence of sufficient number of workers etc.

In Appendices to the VNR, Kazakhstan provided (VNR) the values (for 2010, 2015, and 2018) of its national indicator “Area of eroded agricultural lands” (replacing the SDG indicator 15.3.1) with stable trend between 2015 and 2018.

The Republic of Moldova reported (VNR) that due to the intensive exploitation of land for agricultural purposes, soil is continuously degrading, in need for restoration and protection by forest plantations (the feasibility of which is questioned under Target 15.2 and is possible mostly due to project funding). There was no registry of degraded lands established by the state, but according to NGOs degraded lands accounted for some 30 per cent of the country area. Between 2014 and 2016 the area of 2,180 ha of degraded lands had been afforested, the intensity of works decreased until 2016, then increased, but not yet reached in 2018 the level of 2014.

In 2020, in the course of the self-assessment the Republic of Moldova indicated its 6CBD NR, according to which the implementation of the Soil Fertility Conservation and Enhancement Program for 2011–2020 was expected to halt the degradation of the soil cover on an area of 877 thousand ha of arable land by the end of 2020 and increase soil fertility on the area of 1.7 million ha by 2020. As the 6CBD NR was submitted at the brake of 2018 and 2019, no information on the progress achieved was provided. Moreover, several projects support the achievement of Target 15.3, incl. the project “Soil Conservation in Moldova” (2000–2022) implemented by the Institute for Forestry Management for the rehabilitation and conservation of soils by afforestation of 20.3 thousand ha (8.5 thousand ha have already been afforested), the project “Development of the communal forestry sector in Moldova” (2006–2035) promoted by Moldsilva Agency in collaboration with the BioCarbon Fund, where some 9,400 ha of new communal forests shall be planted on eroded and non-productive lands. Under the heading “Afforestation of degraded land” 6CBD NR noted “Total = 29.59 th. ha of planted forest” and that 790 ha of degraded land were afforested in the course of the implementation of the National Plan for the extension of the forest vegetation areas for the years 2014–2018. Unfortunately, the 6CBD NR did not elaborate on the outcomes of the 2011 National Programme on the Environmental Network for 2011–2018, which, according to the 3EPR, also included the afforestation of degraded sites.

Mongolia reported that land degradation is observed on 76.8 per cent of the total country territory, including loss of soil fertility and degradation of over 60 per cent of the total rangeland area, as well as drying of rivers, springs, lakes and ponds. In this context Mongolia mentioned its National Programme for Combatting Desertification. Mongolia also provided the values of the SDG indicator 15.3.1 (Proportion of land that is degraded over total land area), which (according to the VNR Annex 2) accounted for 6.1 per cent in 2015, 4.5 in 2016, 2.2 in 2017, thus in obvious contradiction with the above-described land degradation.
processes (affecting 76.8 per cent of the total country territory) in the textual VNR part (the same 76.8 per cent value of the SDG indicator 15.3.1 was provided for the 3EPR).

Morocco reported that desertification is a strategic issue for the country (93 per cent of which territory is arid or semi-arid) and mentioned numerous large-scale programmes aimed at reversing the process of land degradation, reducing the extent of desertification and mitigate its adverse effects, including the adoption of the National Action Plan to Combat Desertification, the 2015–2024 ten year programme aimed at preventing desertification, silting and water erosion, which implementation led to the operationalization of the monitoring system and the establishment of two monitoring centres, intensive watershed development works on the area of 800,000 ha, anti-water erosion measures implemented on the area of 250,000 ha (between 2015 and 2019), anti-silting measures on the area of over 41,000 ha, and the program for the development of rangelands on the area of over 650,000 ha. The value of SDG indicator 15.3.1 accounted for 5.35 per cent.

North Macedonia listed its challenges related to desertification and mentioned its National Action Plan to Combat Desertification (including a National Drought Management Plan).

Romania mentioned (VNR) improvements in the legislative framework, the use of national financial mechanisms and EU rural development programs, and efforts to combat desertification, ecological reconstruction of degraded land and soil and mitigate the effects of drought, by creating anti-erosive forest plantations and forest protection belts. However (as already mentioned in section on Target 15.2) the scope of afforestation works on degraded land and planting forest belts was quite limited in 2009–2016 (to 1,211 ha per year in average).

Serbia mentioned (VNR) its Law on Soil Protection (2015) regulating the protection of soil, systematic monitoring of the condition and quality of soil, measures for remediation and re-cultivation, inspection etc., but provided no further details.

Tajikistan reported (VNR) that over 97 per cent of its agricultural lands were affected by erosion, mainly due to unsustainable grazing of pastures (some 3 million ha, or 85 per cent of pastures had been degraded), and that the 2011 survey indicated lost benefits equalling to US$442 million, or 7.8 per cent of the country GDP in 2010. However, according to official data (VNR), only 10 per cent of the country population lived on degraded lands.

Conclusions:

Target 15.3 achievement can properly be assessed on the basis of VNRs only for Kazakhstan, Mongolia, Morocco, and Tajikistan (with positive results for Kazakhstan, Mongolia, and Morocco).

According to additional information provided in 2020, also the Republic of Moldova progressed towards the restoration of degraded land and soil, however, according to its 2020 VNR, the progress in afforestation works is to a large extent dependent on the availability of project funding.

Comparison of results of the 3EPRs and VNRs analysis: the assessment based on the analysis of VNRs confirmed the positive conclusion of the assessment carried out on the basis of the 3EPRs for Kazakhstan and Mongolia (while Uzbekistan for some unknown reasons did not further elaborate its VNR in this respect).

Target 15.4

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

- Indicator 15.4.1 Coverage by PAs of important sites for mountain biodiversity
Methodological remarks

Similarly as in the case of previously commented SDG indicator 15.1.2, in the opinion of the author of this assessment, the value of SDG indicator 15.4.1 cannot be measured prior to the successful delimitation of sites and areas (e.g., KBAs) important for mountain biodiversity, which would require conducting scientific research and field nature inventoring works undertaken at the national scale (in order to identify such priority importance sites and areas), and possibly also the official adoption of e.g., the list of such sites and areas by the relevant authorities of a particular country.

This is probably why in 2018 Uzbekistan (where mountain ecosystems were in fact best conserved, compared with the other main ecosystem types) nationalized Target 15.4 by using a different wording (“Proportion of protected mountain ecosystems in their total area”) of the SDG indicator 15.4.1 (“Coverage by PAs of important sites for mountain biodiversity”), which changed its original meaning and objectives. The original wording required undertaking scientific research aimed at the identification of all areas important for the conservation of mountain biodiversity (e.g., KBAs, IBAs or migratory routes of rare and endangered fauna species), some of which should then become legally protected. Results of the above analysis could then justify and guide the necessary extension of the PA system. The modified indicator requires a simple comparison of the total area of mountain ecosystems with the total area of existing mountain PAs.

In the opinion of the author of this assessment, SDG indicator 15.4.2 (MGCI) is too general and too artificial to be of any tangible value for the EPR process. Firstly, the MGCI value for the year when the EPR report was being prepared is just a number, which cannot further be interpreted, only potentially be used for the comparison of the country MGCI value with the MGCI values for the larger region or the neighbouring countries. Hence, only the long-term monitoring of MGCI value changes could inform on trends in mountain vegetation cover.

Moreover, it should be emphasized, that the MGCI (based on the automated Collect Earth analysis of images from Google Earth and Bing Maps and Landsat 7 and 8 datasets from Google Earth Engine) provides the aggregated information on the green vegetation cover of mountain areas (including forests, shrubs, grassland and cropland), which can be disaggregated only by mountain elevation class (e.g., Class 3: elevation 2,500–3,500 meters) but not by the vegetation cover component. In other words, one square kilometre of the close canopy high growing stock mountain rainforest or temperate broadleaf mountain forest in the MGCI aggregation understanding equals to one square kilometre of e.g., poor mountain grassland or cropland in arid areas.

Despite the above reservations, if really deemed necessary, the values and trends in SDG indicators 15.4.1 and 15.4.2 are often available for a particular country at the website of the BIP initiative. However, in the opinion of the author of this assessment, such indicator values should rather be perceived only as rough estimates and interpreted by the EPR experts with extreme caution.

Coverage of Target 15.4 in 3EPR reports (since 2017)

Please note that more information concerning trends in development and management of PAs (including, where relevant, mountain PAs) is available in section 1.4 of this document. Therefore, the below assessment of Target 15.4 achievement is mainly based on the contents of the 3EPR SDG-related boxes relevant to this Target.
The progress towards the achievement of Target 15.4 was evaluated in 3EPR SDG-related boxes for all six countries, as well as in the draft 3EPR of Romania, however only the 3EPRs of North Macedonia, Romania and Uzbekistan directly referred to Target 15.4 SDG indicators.

Due to the above-described shortcomings of both SDG indicators for Target 15.4, for practical reasons EPR reports refer rather to e.g., the presence of mountain PAs than the undefined ‘sites important for mountain biodiversity’ (SDG indicator 15.4.1), and to reforestation activities undertaken (or planned) in mountain regions, than the national MGCI value (SDG indicator 15.4.2).

**Target 15.4 achievement on the basis of the 3EPRs**

Target 15.4 assessment in the 3EPR SDG-related box for Albania referred to the process of establishing the Albanian Alps National Park.

As for Bosnia and Herzegovina, the 3EPR SDG-related box mentioned the two existing national parks protecting mountain ecosystems and plans for the significant extension of the PA network also in the mountain regions of both the FBiH and RS, by 2028 and 2025 respectively. However, it should be noted that the implementation of the Spatial Plan of the FBiH for the period 2008–2028 (which stipulated the extension of the PA network by 448,800 ha, incl. 424,096 in mountainous areas) and of the 2015 Spatial Plan of RS (which set the target to extend the PA share in the total area of this entity to 15.51 per cent by 2025) seem to be slow, as the actual extension of the PA network within the 3EPR reporting period was insignificant (1,851.1 ha, according to Table 11.1), the feasibility of the achievement of these ambitious targets by 2028 and 2025 respectively can be questioned.

The 3EPR SDG-related box for Kazakhstan noted that mountain ecosystems of Kazakhstan were the best protected (compared to other ecosystem types), as some 10 per cent were covered by PAs (including 5.49 per cent inside the most effective PAs granted the legal entity status). Moreover, the designation of three new large-scale PAs in mountain regions was planned by 2022.

The achievement of Target 15.4 remains a challenge for Mongolia, where the 2010 gap analysis indicated that the prevailing parts of mountain ecosystems, such as sub-alpine woodland, high mountain steppe and sub-boreal mixed forest remain outside PAs. The EPR SDG-related box mentioned the 2015 National Biodiversity Programme, setting the target to increase the forest cover to 9 per cent of the country’s territory by 2025, which would then increase the (currently unknown) MGCI value, as mountain ranges cover a large part of Mongolia.

The 3EPR SDG-related box for North Macedonia provided the value of SDG indicator 15.4.1, which remained unchanged since 2006, and in 2017 accounted for some 23 per cent of the Mountain KBAs identified in the country (which means no progress since 2006). The North Macedonia’s value of the MGCI value (SDG indicator 15.4.2) at the level of 96.5 per cent seems to be quite impressive (close to 1), but alone does not allow for the assessment whether the mountains in this country are highly afforested or simply covered by croplands.

According to 3 EPR Chapter 11, Romania gives priority to the conservation and sustainable use of biological diversity in mountain ecosystems and carried assessments of direct and underlying causes of degradation and loss of biological diversity of mountain ecosystems in preparation for the elaboration of management plans for PAs located in montane regions (national and natural parks and Natura 2000 sites with administration units). However, no data on the coverage by PAs of important sites for mountain biodiversity (necessary for the calculation of SDG indicator 15.4.1) were available. In 2017 Romania reported the 96.83 per cent value of its MGCI (SDG indicator 15.4.2).

Mountain ecosystems of Uzbekistan were also relatively best protected (compared to other main ecosystem types), as some 14 per cent of mountain ecosystems (however not necessarily of the ‘sites important for mountain biodiversity’) in Uzbekistan was already included in existing PAs of the effective
national categories I and III (state strict nature reserves, and national nature parks). Nevertheless, existing PAs encompassed only 12 of the 36 KBAs identified in the Western Tien-Shan Mountains, while the mountain massifs in the Kyzyl Kum Desert remained without any form of spatial protection. The MGCI value for Uzbekistan accounting for 54.81 per cent as at 2017 indicates that the vegetation cover of its mountain regions was below the average regional value of 64 per cent for Central Asia and Southern Asia.

**Conclusion:**

Target 15.4 achievement can be assessed on the basis of the 3EPRs, but usually not with the use of related SDG indicators. The progress can be noted in case of Kazakhstan.

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress in the conservation of mountain ecosystems made by all six above countries (thus, including Kazakhstan) as well as all other reviewed countries for which Target 15.4 is relevant (thus, countries which encompass mountain regions) should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 15.4 in Voluntary National Reviews**

Morocco briefly described its progress relevant to the achievement of Target 15.4, while Kazakhstan provided values of two indicators (1 global and 1 national). Bosnia and Herzegovina, Bulgaria, Montenegro, and Romania did not explicitly refer to Target 15.4.

Albania (which reported in 2018 that the alignment of SDG15 Targets was partial), Georgia, Mongolia, North Macedonia, Serbia, Tajikistan, and Uzbekistan did not refer to Target 15.4, despite that a considerable part of their territory is mountainous. It should be noted that in this case North Macedonia could make the use of the 3EPR for reporting on SDGs, and simply quote indicators given in its 3EPR assessment of SDG Target 15.4. For the lowland Belarus, and for the Republic of Moldova Target 15.4 is nonrelevant.

**Target 15.4 achievement on the basis of VNRs and additional information provided in 2020 by countries**

Due to the topography of the country, several new PAs planned for the designation in Bosnia and Herzegovina would most probably be established in mountain regions (however there is not explicit statement on the above in the VNR). The above possibly relates also to mountainous Bulgaria, continuing the further extension of its National Ecological Network (NEN).

According to the additional information provided to ECE EPR team in 2020, 98 per cent of forests in Georgia are distributed in the higher slopes of its mountainous areas. The country expects to be able to calculate the value of its SDG indicator 15.4.2 (MGCI) once the NFI (first since 1990s) is finalized in 2021.

In Appendices to the VNR, Kazakhstan provided values (for 2010, 2015, and 2018) of the SDG indicator 15.4.1 (varying trend: 19.7 per cent in 2010, 19.4 in 2015, and 19.8 in 2018), and of its national indicator “Mountain Forest area”, replacing global 15.4.2 MGCI (VNR), with the growing trend (from 5,640.9 thousand ha in 2010 to 5,940.0 in 2018).

Morocco emphasized the importance of its mountain regions, extending over a quarter of its territory, harbouring important reserves of biological diversity and water sources, more than 60 per cent of country’s forests, and over a third of its agricultural areas. Furthermore, Morocco indicates the importance of mountain ecosystems, being habitats of numerous endemic species. The PA network in mountain regions of Morocco included 7 national parks (70 per cent of all) and 83 (54 per cent of all) SIBEs. However, the value of SDG indicator 15.4.1 has not been provided in the VNR.
Romania emphasized (VNR) that highly sensitive mountain ecosystems were also particularly threatened by inappropriate forms of tourism and associated infrastructure development and mentioned their “in situ” conservation under the PAs network (the country does have many PAs in the Carpathian Mountains), but did not further elaborate on this subject, e.g., on plans for a possible extension of its PA network in montane regions. As mentioned in previous sections (on Targets 15.1 and 15.2), Romania harbours a large extent of natural forests in the Carpathian Mountains (including primeval or “virgin”, partly included in the World Heritage property), and extensive network of PAs in its montane regions, but more detailed information specifically concerning the protection of mountain ecosystems and forests (relevant to Target 15.4 achievement) was not provided.

**Conclusion:**

Target 15.4 achievement can be assessed on the basis of VNRs probably only for Morocco and Kazakhstan, with positive results.

**Comparison of results of the 3EPRs and VNRs analysis:** the assessment based on the analysis of VNRs confirmed the positive conclusion of the assessment carried out on the basis of the 3EPRs for Kazakhstan.

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress in reducing the degradation of natural habitats, halting the loss of biodiversity, and preventing the extinction of threatened species made by all above 7 countries (as well as all other reviewed countries) should possibly be conducted under the future fourth EPR cycle.

**Target 15.5**

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

Please note, that the SDG Target 15.5 corresponds with the Aichi Biodiversity Target 11 “By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems”, and the Aichi Biodiversity Target 12 “By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained”.

- Indicator 15.5.1 Red List Index (RLI)

**Methodological remarks**

In the opinion of the author of this assessment, SDG indicator 15.5.1 (RLI), aggregating change in extinction risk across groups of species, even if calculable for the respective country, is not the proper measure to assess the country performance towards the achievement of Target 15.5.

The RLI can show trends in overall (in particular at the global scale) extinction risk for species, and under certain conditions can also be used by Governments to track their progress towards reducing biodiversity loss. However, according to the IUCN, “Most species that move between categories on The IUCN Red List (...) do so because of improved knowledge or revised taxonomy. It is therefore impossible to determine any meaningful trends in the status of biodiversity simply by looking at overall changes in numbers of threatened species between updates. For this reason, the figures presented in the Summary Statistics for numbers of threatened species in each IUCN Red List since 1996 must be interpreted with extreme care; these figures illustrate increasing assessment efforts by IUCN and its Partners since 1996, helping to refine our current understanding of the status of biodiversity, rather than showing genuine status changes over...
It should also be noted, that the global RLI is currently available only for five taxonomic groups (those in which all species have been assessed at least twice).

The calculation of the national RLI is often not possible, as it would require the repeated assessments of extinction risk at the national scale, and resulting elaboration of at least two editions of national Red Lists or Red Books with the use of IUCN criteria, which is often not the case for several assessed 3EPR countries, some of which (e.g., entities in Bosnia and Herzegovina, Kazakhstan and Uzbekistan) either continue to use a different threat categorization system than adopted by the IUCN, or have adopted the IUCN criteria only recently (e.g., Bulgaria, Mongolia, and Tajikistan) for the elaboration of their most update national Red Lists or Books. Similar databases and resulting official publications of some other EPR countries are either not complete in taxonomic groups coverage (e.g., in Serbia, where only the status of plants and butterflies has so far been assessed), or have not yet been elaborated (e.g., in Georgia, Montenegro, Morocco, and North Macedonia).

Secondly, the national Red Lists (or resulting Red Books) often contain outdated information, the apparently constant trend in number of species listed in subsequent editions may simply indicate the lack of regular monitoring and resulting data feed and updating. This is also why national RLI values must not be used as the basis for comparisons between countries, also due to the fact that the baseline number of species in the assessed taxonomic groups significantly varies between countries.

Despite the above substantive reservations, the value of SDG indicator 15.5.1 (RLI) can be found at the website maintained and regularly updated by the BIP, although with a quite misleading and bizarre explanation "The index varies from 1 if the country has contributed the minimum it can to the global RLI (i.e., if all species in the country are classified as Least Concern) to 0 if the country has contributed the maximum it can to the global RLI (i.e., if all species in the country are classified as Extinct or Possibly Extinct)", although the expected contribution, and a deliberate action undertaken by country should rather be to protect the globally threatened red-listed species than to exterminate these species, or bring them to the brink of extinction.

Some shortcomings and sources of uncertainty associated with RLI values and trends are also mentioned and commented in the explanation of the concept of SDG indicator 15.5.1.

Due to the above, in the opinion of the author of this assessment, the achievement of SDG Target 15.5 can best be assessed by analysing the effectiveness of country’s response to threats, and performance towards the conservation of threatened species (e.g., the implementation of species protection action plans), and measures undertaken for the restoration of ecosystems and habitats (briefly summarized in sections 1.1.1. and 1.1.2. of this assessment).

It should also be emphasized that achieving the success in biodiversity conservation requires the whole sequence of actions to be implemented, beginning from gathering and compiling baseline data on species and habitats, then analyzing such in order to assess their current status and identify the main threats to their preservation or recovery (as the necessary basis for informed decision-making), later deciding on the most urgent priorities for interventions and assessing the feasibility of possible actions (which scope and timeframe would first and foremost depend on available operational and financial capacities), then the elaboration and formal adoption of national or regional action plans (preferably with realistic budgets), and finally the implementation of planned conservation measures and activities, followed by regular monitoring of their effectiveness, and the resulting adjustment or revision of the above action plans and programmes for the next implementation periods.

Coverage of Target 15.5 in 3EPR reports (since 2017)
Please note that more information concerning trends in species and ecosystems is available in section 1.1. of this document, while trends in development and management of PAs are assessed in section 1.4. Therefore, the below assessment of Target 15.5 achievement is mainly based on the contents of the 3EPR SDG-related boxes relevant to this Target.

The position of a country vis-à-vis Target 15.5 was described in SDG-related boxes by 5 out of 6 recently conducted EPRs (since 2017), except for the 3EPR of Bosnia and Herzegovina, as well as in the draft 3EPR of Romania. However, for different reasons, the value and trend of the RLI (but based on global threat assessment, in the absence of national red lists) was provided only for Romania, while the other five 3EPRs referred to country’s efforts towards the conservation of threatened species (in particular those from the national Red Lists) and the restoration of ecosystems and habitats.

**Target 15.5 achievement on the basis of the 3EPRs**

The 3EPR SDG-related box for Albania noted updating in 2013 the national Red List of Fauna and Flora, in accordance with the IUCN criteria, which was followed by the adoption of species conservation action plans, aimed at the preservation of several red-listed species. No further details on the actual implementation of these action plans were available for the 3EPR.

As for Kazakhstan, according to available data, the populations of many rare and threatened animal species were growing in numbers. However, there was almost no data available on the current status of rare and threatened flora species and plant communities, thus the overall trend in threatened species could not be assessed.

Similarly, the current status of threatened species populations in Mongolia could not properly be assessed due to the discontinuation of research and national wildlife censuses after 2010. However, according to IUCN global assessments, as many as 41 animal species native to Mongolia (11 mammal, 25 bird, 2 fish and 3 invertebrate species) were considered by the IUCN in 2017 as globally threatened. Furthermore, according to the last Red List edition, 110 vascular plant, 11 fish, 2 reptile, 4 amphibian, 20 bird and 21 mammal species were regionally threatened in the country, which clearly indicates priorities for the development of national species conservation programmes.

In North Macedonia no national red lists have been adopted prior to its 3EPR, but according to IUCN assessments 4 plant and 120 fauna species occurring in the country were globally threatened by extinction. Despite the above, the Balkan chamois, which is a regionally endemic species, was still hunted.

According to 3 EPR Chapter 11 of Romania, a slight upward trend has been observed in the value of the RLI (SDG indicator 15.5.1), which increased over the last decade from 0.92913 in 2010 to 0.92976 in 2020, possibly indicating that the rate of red-listed species extinction in this country is slowly decreasing.

However, it should be emphasized that due to the fact that no national red lists had so far been adopted in Romania, the above values of SDG indicator 15.5.1 had to be calculated on the basis of the global IUCN assessment, hence the apparent positive trend did neither reflect the status of globally threatened species inside Romania, nor the effects of country performance. Only the positive changes in the value of a ‘downscaled’ RLI (based on national red lists, indicating the species conservation status in Romania) could allow to assess how well globally threatened species are conserved in this country (thus contributing to the global efforts towards the conservation of threatened species). Secondly, such index cannot consider the conservation status of species and subspecies not yet assessed by the IUCN at the global level, including e.g., locally endemic species (which would probably be listed on the national red lists by Romania).

The national Red Books of Uzbekistan continue to use a different threat categorization system than the IUCN, also for the planned fifth red books edition. According to IUCN global assessments, as many as 46
animal species and 16 plant species occurring in Uzbekistan were globally threatened by extinction, which clearly indicated priorities for the possible national species conservation programmes or action plans.

Conclusions:

Target 15.5 achievement can be assessed on the basis of the 3EPRs, but not with the use of the RLI as the globally adopted indicator (except for Romania, but taking into account the above reservations, resulting from the absence of the national red lists).

The progress can be noted in case of Albania, which updated its national red list, and adopted species conservation action plans for the key red-listed species (in particular if these species conservation action plans were affectively implemented, which was not evaluated in the 3EPR).

The progress made by Kazakhstan is best demonstrated by the stable or growing trends in population numbers of several globally threatened ungulate mammal species, as a result of anti-poaching measures applied, and the state species conservation programmes and projects, implemented in cooperation with relevant scientific and academic institutions, and national ecological NGOs, with the support of the international community. On the other hand, the country progress towards preventing the extinction of threatened flora species cannot be evaluated, due to the general non-availability of data on the current status of rare and threatened flora species and plant communities of Kazakhstan.

Similarly, the absence of national red lists (the case of North Macedonia, but only until 2019, according to VNR – see the next sections) or the discontinuation of systematic scientific field research, nature inventorying works and wildlife censuses at the national scale (the case of Mongolia after 2010) were serious impediments for the assessment of the current conservation status, identification of threats, prioritizing the most urgent interventions, and planning action plans on species conservation or recovery, or state programmes on ecosystem restoration.

Resulting recommendation for the fourth EPR cycle:

The assessment of the progress in reducing the degradation of natural habitats, halting the loss of biodiversity, and preventing the extinction of threatened species made by all 7 above countries (as well as all other reviewed countries) should possibly be conducted under the future fourth EPR cycle.

Coverage of Target 15.5 in Voluntary National Reviews

Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Mongolia, North Macedonia, the Republic of Moldova, and Romania briefly described their progress relevant to the achievement of Target 15.5.

Albania (which reported that the alignment of SDG15 Targets was partial), Montenegro, Morocco, Serbia, Tajikistan, and Uzbekistan did not refer to Target 15.5.

Target 15.5 achievement on the basis of VNRS and additional information provided in 2020 by countries

In the course of the self-assessment process in 2020 Albania provided additional information concerning its progress in achievement of CBD Aichi Target 11 and development of its PA network (see sub-section on SDG Target 15.1).

Belarus referred (VNR) to the adopted national legislation, the NBSAP for 2016–2020, other national strategic documents aimed at the development of a system of specially protected natural areas, the conservation and sustainable use of wetlands, peatlands, and the prevention of land degradation as well as to the current implementation of 49 action plans for the conservation of rare and endangered species.
of wild plant and animal species, and management plans for selected populations. Moreover, Belarus noted the development of legislation aimed at the landscape diversity conservation.

**Bosnia and Herzegovina** indicated (VNR) the recently revised NSBAP for 2015–2020, and the growth in the PA number and share in the country territory (to 3.24 per cent for the FBiH, and 1.3 for RS), as well as the ongoing efforts to expand the PA network in the FBiH by the designation of at least 10 new PAs (which is less than envisaged in the Spatial Plan for 2008–2028, which forecasted the establishment of 14 new PAs, as mentioned in the 3EPR).

Furthermore, as part of the self-assessment of the implementation of the 3EPR recommendations, carried out in 2020, Bosnia and Herzegovina provided additional information on the development of its PA network (see sub-section on SDG Target 15.1).

**Bulgaria** noted (VNR) the country efforts towards building the National Ecological Network (NEN), adoption of 61 action plans for priority species of animals and plants, restoration of riparian and wetland habitats in 10 Natura 2000 sites, as well as provided comprehensive information on the national PA network (more detailed statistical data on the surface of terrestrial sites designated under NATURA 2000 was provided in the Statistical Monitoring Annex to VNR).

Furthermore, in 2020 Bulgaria provided additional information on its progress in achievement of SDGs, including data on the development of its national PA and Natura 2000 networks (see sub-section on SDG target 15.1).

**Georgia** mentioned (VNR) the ongoing designation of new PAs, the progress in the development and plans for the further extension of the Emerald Network (SDG Target 15.1).

In the voluntary self-assessment of the achievement of SDGs by Georgia provided to ECE EPR team in 2020, the country stated that information necessary to calculate the value of SDG indicator 15.5.1 (RLI) was not available. According to the BIP, the value of SDG indicator 15.5.1 for Georgia was constantly decreasing, from 0.896 in 1993 to 0.875 in 2010 and 0.871 in 2020. Furthermore, Georgia provided additional information on the development of its national PA and Emerald networks (SDG Target 15.1).

**Kazakhstan** noted Ramsar sites (VNR), on the development of the PA and IBA networks (VNR), as well as on the establishment of ecological corridors for wildlife migration and plans for the further extension of its PA network (VNR). Furthermore, in Appendices to the VNR, Kazakhstan provided values (for 2010, 2015, and 2018) of e.g., its national indicator “List of rare and endangered species” (instead of the SDG indicator 15.5.1 RLI) with the same values for both plant and animal species in each respective year, and the specific national indicator “Saiga population growth” disaggregated for the 3 local populations (VNR), illustrating the growing trend for the Ural saiga population, and varying trends for Ustyurt and Betpakdala populations.

The **Republic of Moldova** reported (VNR) on the publication (in 2015) of the third edition of its Red Book, where the number of ‘red listed’ rare or endangered species almost doubled, compared to the previous edition (427 versus previous 242, 208 vs. 126 in plant species, and 219 vs. 116 in animal species). The share of PAs (5.61 per cent, thus already higher than 4.65 per cent in 3EPR of 2013) in the country territory did not change between 2014 and 2018, same as 2.22 per cent share of Ramsar sites. Unfortunately, the 2020 VNR did not inform on the progress with the nomination of the proposed new (fourth) Ramsar site “Padurea Domneasca”, pending since 2008 (mentioned in 3EPR).

Furthermore, in the course of the self-assessment in 2020, the Republic of Moldova indicated its 6CBD NR, which noted the formal adoption and publication of the 3rd edition of the national Red Book, containing 208 species of plants and fungi, and 219 species of animals (for details see sub-section 1.1.1

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on threatened species), and on the development of 3 Management Programs for Conservation of Species, elaborated by the Institute of Zoology, concerning globally and regionally CR European mink *Mustela lutreola*, EN *Bombus fragrans*, and VU sterlet *Acipenser ruthenus*, on the basis of analysis of their biologic characteristic, rarity status, distribution and range of their occurrence in the country, as well as threats to their favourable status. 6CBD NR also contained the information on the plans for the extension of the national PA and Emerald networks in the Republic of Moldova (see sub-section on SDG Target 15.1).

**Mongolia** referred to the revised and approved NBSAP for 2015–2025, and the plans to extend the State Special Protected Area network to reach the share of 30 per cent of the country territory by 2030 (from the current 17.85 per cent, already encompassing 27.9 million ha), and reported that 41 native species were endangered, however provided no further details.

**Morocco** in its VNR noted the size of its network of SIBEs and Ramsar sites, and on the establishment of 29 biological reserves of threatened, extinct and reintroduced species (see sub-section on SDG Target 15.1).

**North Macedonia** in its VNR mentioned 976 endemic species (incl. 870 local endemics), listed the main refuges of such rare species, noted its first ever national Red List (developed in 2019, including 14 plant, and 46 reptile or amphibian species), and on the current size of its 86 PAs (see Target 15.1), 2 existing Ramsar sites, planned Ramsar nomination for Lake Ohrid. Furthermore, North Macedonia reported on the harmonization of related legislation with the EU Directives, the adoption of the National Strategy for Nature Protection and the Action Plan for 2017–2027, and the NBSAP for 2018–2023.

Furthermore, as part of the self-assessment of the implementation of the 3EPR recommendations, carried out in 2020, North Macedonia noted the development in 2019 of the first complete national Red List (publicly available online[^342]), incl. 46 reptile and amphibian, and 14 plant species, which provides scientific information and analysis of the state, trends and level of threat to species in accordance with the IUCN criteria. The National Red List of fungi and National Red List of Large Mammals (lynx, bear, wolf, jackal, otter) were expected to be completed by the end of 2020 (however, not yet available, as of 10 January 2021). North Macedonia provided also additional information on the development of its PA network, as well as the continuation of the PA proclamation and re-proclamation procedure, and preparations for the Natura 2000 network formation (see sub-section on SDG Target 15.1).

**Romania** mentioned (VNR) the 1994 Red List of Higher Plants of Romania (listing e.g., 39 endangered, 171 vulnerable, and 1,256 rare species), on the occurrence of 57 endemic and 171 subendemic floral taxa (species and subspecies) of which 75 per cent survived in the Carpathian Mountains, as well as endangered 9 fish, 9 amphibian, 6 reptile, 6 bird, and 2 mammal species. 23 plant and 24 vertebrate animal species were declared as “Natural Monuments” and provided strict legal protection. The VNR also noted viable populations of large carnivores (incl. brown bear, lynx, and wolf) inhabiting the Carpathian Mountains, subendemic vertebrate fauna species (occurring also in the Danube Delta and Black Sea coastal areas), and large populations of the red-breasted goose wintering in the country, and Dalmatian pelican nesting in the Danube Delta (VNR described the status of the latter species as “world threatened”, however according to the IUCN Red List assessments published also in 2018 its status was only NT at the global scale and LC at the European scale, hence not yet threatened with global extinction according to the IUCN threat categorization system).

As already mentioned in section on Target 15.1, the VNR of Romania contains detailed assessments of trends in the conservation status of habitats and species (also for different biogeographical and marine regions, and by habitat category and species group). The last paragraph of the VNR section on SD Goal 15, under the heading “Partnership with other associations” restoration programmes targeted at single species (e.g., sturgeon, European bison) were mentioned, but solely attributed to the WWF, while the involvement of state institutions, agencies or entities (e.g., PAs) in the above initiatives has not been

explained. The VNR also noted the development of a strategy for large carnivore protection in Europe by the WWF, with Romanian participation.

In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR, which noted that 2,628 species were protected (incl. 1,760 strictly protected). 50 per cent of species protected in the country were listed by e.g., the 1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats, and CMS, or in Annexes to Habitats and Birds Directives. The first action plans for the management of large carnivores (grey wolf, bear and lynx) were done in 2007, pending adoption. New species management programs were prepared for bear and lynx in 2018, and in 2019 for the wolf. As for the flora, the threat category according to IUCN methodology was assessed and determined for 1,627 taxa included in the Preliminary Red List of the flora of Serbia (2016).

As a result of the self-assessment of the implementation of the 3EPR recommendations carried out in 2020, Uzbekistan noted that (in accordance with 3EPR Recommendation 11.1) a new version of the Red Book was published in late 2019 (already after the 3EPR information cut-off date), its Vol. 1 included 314 plant species, while Vol. 2 included 206 animal species. Although the link (www.redbook.uz) indicated by Uzbekistan does not work, other sources noted that Vol. 1 includes 15 rare and endemic plant species not previously red-listed (incl. several new species for science that have been discovered in the last few years), and that, compared with the previous edition, 157 plant species have changed status. As for animals, the 2019 Red List includes 30 species of mammals (32 with subspecies), 52 species of birds, 21 species of reptiles, 17 species of fish (18 with subspecies), 3 species of annelids, 14 species of molluscs, and 66 species of arthropods (hence, more mammal, bird, reptile, and annelid species than in the previous 2009 edition of the Red List).

Moreover, Uzbekistan noted in 2020 on the establishment (in accordance with 3EPR Recommendation 11.3) of external protective buffer zones for 3 state strict nature reserves, planned designation of 4 more SSNR buffer zones in 2020, and on the plans for the further extension of its national PA network (see sub-section on SDG Target 15.1).

**Conclusions:**

Target 15.5 achievement can be assessed on the basis of VNRs only for Belarus, Bulgaria, Kazakhstan, North Macedonia, the Republic of Moldova, and Romania, with positive results in all 5 cases, however in different themes, depending on the previous advancement of a particular country in biodiversity conservation process.

The progress in national red books and red lists development and adoption (North Macedonia in 2019) or updating such (the Republic of Moldova in 2015, Uzbekistan in 2019) provides an adequate scientific basis for prioritizing the most urgent directions of necessary interventions, and allows for the preparation, adoption and implementation of the national action plans or programs towards the conservation of rare and endangered species of wild plant and animal species, or for the conservation, restoration and sustainable use of natural habitats (similar to those already implemented by Belarus, Bulgaria, Kazakhstan, the Republic of Moldova, Mongolia, North Macedonia, Uzbekistan, and possibly also Albania and Romania).

**Comparison of results of the 3EPRs and VNRs analysis:** the assessment based on the analysis of VNRs confirmed the positive conclusion of the assessment carried out on the basis of the 3EPRs for Kazakhstan (concerning threatened fauna species).

The recently submitted VNR by North Macedonia provided an important update on the finalization and adoption of its first national red list (absent at the time of its 3EPR). It should also be noted that the VNR by Romania
mentioned the 1994 Red List of Higher Plants, while, according to its 2020 draft 3EPR, the development and adoption of the red lists is still pending, while the legal basis for the adoption of such is still missing (thus the 2007 and 2012 “Red Lists of bryophytes” mentioned in 3EPR were only unofficial studies, and therefore retain the status of scientific publications, not yet adopted by any legislative act).

For numerous reasons Albania (which progress has positively been evaluated on the basis of its 3EPR) did not further elaborate their VNRS in this respect and did not use the VNR opportunity for reporting the possible progress in the actual implementation of previously adopted species conservation action plans (which therefore remains an issue to be assessed under the possible future 4EPR).

**Resulting recommendations for the fourth EPR cycle:**

The progress towards the extension of the PA network, explicitly planned by Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Mongolia, and Uzbekistan (as well as for all other reviewed countries) should possibly be assessed under the fourth EPR cycle.

Some best practice examples can be identified on the basis of VNRS and additional information provided by countries in 2020, e.g., the successful establishment of ecological corridors for wildlife migrations (by Kazakhstan, described in its 3EPR Chapter 9), the designation of external protective buffer zones for several state strict nature reserves (by Uzbekistan, following 3EPR recommendation), and the development of legislation on the conservation of landscape diversity (by Belarus, probably as the first among all 3EPR countries). Such best practice examples should possibly be promoted among the EPR countries, during the fourth EPR cycle (or taken into account when elaborating recommendations resulting from the fourth EPR cycles).

**Target 15.6**

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

Please note, that the SDG Target 15.6 corresponds with the Aichi Biodiversity Target 16 “By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation”.

- Indicator 15.6.1 Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits

**Methodological remarks**

According to its definition, as explained in the E-Handbook on Sustainable Development Goals Indicators' [https://unstats.un.org/wiki/display/SDGeHandbook/Indicator+15.6.1](https://unstats.un.org/wiki/display/SDGeHandbook/Indicator+15.6.1) this is an international indicator, not monitored at the national level. As this “yes or no” indicator determines only whether a country has adopted related frameworks (legislative, administrative and policy) or not, the EPR reports rather try to evaluate whether such frameworks (if adopted) were enough efficient to ensure the achievement of the desired result.

**Coverage of Target 15.6 in 3EPR reports (since 2017)**

The position of a country vis-à-vis Target 15.6 was described in SDG-related boxes for Albania, Kazakhstan, and Mongolia, as well as in the draft 3EPR of Romania. Target 15.6 is non-relevant to Bosnia and Herzegovina, North Macedonia, and Uzbekistan, which are not yet Parties to the CBD “Nagoya” Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the CBD.
Target 15.6 achievement on the basis of the 3EPRs

The 3EPR SDG-related box for Albania (which is Party to the Protocol since 2013) noted that its implementation is still at an early stage, and that the related legislative, administrative, and policy frameworks were not yet in place.

As for Kazakhstan (which is Party to the Protocol since September 2015), the 3EPR SDG-related box explicitly stated that, according to the Interim National Report of 15 January 2018, Kazakhstan has not yet undertaken any legislative, administrative or policy measures toward the implementation of the Protocol.

At the time of EPR Mongolia (which is Party to the Protocol since 2014) was preparing the related legal framework, and relevant provisions have already been included in the National Biodiversity Programme 2015–2025. However, the missing capacities for establishing effective administrative structure were indicated in the SDG-related box.

The 3EPR of Romania (which is Party to the Protocol since 2019, and since 2012 to the 2001 International Treaty on Plant Genetic Resources for Food and Agriculture) confirms that the country has already adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits arising from utilization of genetic resources.

Conclusion:

Target 15.6 achievement can be assessed on the basis of the 3EPRs for all four above countries, however with positive result solely for Romania, possibly also for Albania, and with negative results in the remaining two cases. The period of some 4 years between the date when the Protocol came into force for Kazakhstan and Mongolia and the year when the 3EPR was conducted was not enough to establish the legal basis, much less the administrative structure, and policy framework.

Resulting recommendation for the fourth EPR cycle:

The assessment of the progress made in the implementation of the CBD Nagoya Protocol by the above 3 countries (Albania, Kazakhstan, and Mongolia), and all other reviewed countries which are Parties to this Protocol but have not yet adopted related frameworks should possibly be conducted under the future fourth EPR cycle.

Coverage of Target 15.6 in Voluntary National Reviews

None of the 10 relevant countries (Albania, Belarus, Bulgaria, Kazakhstan, Mongolia, Montenegro, Republic of Moldova, Romania, Serbia, and Tajikistan) referred in their VNRs to Target 15.6. (which is non-relevant to Bosnia and Herzegovina, Georgia, Morocco, North Macedonia, and Uzbekistan, which are not Parties to the CBD Nagoya Protocol).

Target 15.6 achievement on the basis of additional information provided in 2020 by countries

According to additional information provided in 2020 to the ECE EPR team in the course of the voluntary self-assessment, Albania has enacted the national legislation for the enforcement of the Nagoya Protocol. However, only the legislation has been mentioned, while the required related administrative and policy frameworks might not yet be in place (which shall therefore be verified under its possible 4th EPR).

As a result of the self-assessment of the implementation of the 3EPR recommendations carried out in 2020, Georgia noted that it has not yet ratified the Nagoya Protocol but has undertaken some steps towards the

\[^{344}\text{Montenegro became the Party to the CBD Nagoya Protocol on 12 November 2020.}\]
ratification of the Protocol (incl. translation of its authentic version of the protocol translated into Georgian) and the development of relevant legislation. Furthermore, with support of the German International Cooperation Society (GIZ) the draft Law on Biodiversity has been prepared, including ABS-related topics (once adopted, it will establish necessary legislative framework for the implementation of the Protocol). It is assumed that Georgia will ratify the Nagoya Protocol once the Law on Biodiversity is adopted.

According to 6CBD NR by the Republic of Moldova there was no specific national legislation on access to genetic resources and benefit-sharing (as of January 2019).

According to 2019 6CBD NR by Serbia, which is a party to Nagoya Protocol since January 2019, its implementation was mainly done through consultation process and raising awareness of the significance of genetic resources and traditional knowledge regarding genetic resources and questions referring to access and division of benefits.

Conclusions:

Target 15.6 achievement cannot be assessed on the basis of VNRs.

According to additional information provided to the ECE EPR team in 2020, Georgia will ratify the Nagoya Protocol upon adoption of its new Law on Biodiversity.

Targets 15.7 and 15.c

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

- Indicator 15.7.1 Proportion of traded wildlife that was poached or illicitly trafficked
  

Methodological remarks

In the opinion of the author of this assessment, SDG indicator 15.7.1 (which simultaneously constituted SDG Target 15.c) is by definition either non-available or, if any values are officially reported, generally not credible (hence, corresponding SDG indicators 15.7.1 and 15.c are neither feasible nor realistic).

Both poaching and illicit trafficking are illegal activities, always prohibited by the national law, which infringement is usually punished by imprisonment and/or high penalties. Hence, the exact numbers of such criminal offences are known solely to individual perpetrators, and for obvious reasons not revealed to the authorities. Moreover, such can neither adequately be controlled, nor monitored and precisely measured by relevant state agencies and law enforcement services (not even in developed countries). Poached or illicitly acquired animals are either consumed or processed by the perpetrators, their close families and confidential neighbours, or secretly sold in the black market, leaving no trace in official statistics and accounting backups. Besides, only some part of poached wildlife or illegally taken plants or mushrooms is traded, and much smaller part of these traded specimens is seized.

Due to the above, credible statistics on the animal population numbers as well as on the scope of the above illegal activities do not exist. In result, the true dimension of poaching and trafficking of protected species can only be estimated. The unavoidable discrepancy between the potentially available data (disclosed, and officially reported) and the actual numbers makes it impossible to accurately assess both the true numbers of law infringement cases, and the trends.

This is probably why the explanation of SDG indicator 15.7.1 limits the meaning of “illegal trade” term to the sum of the value of all CITES/listed specimens seized, and simultaneously admits that “seizures are an incomplete indicator of trafficking, and subject to considerable volatility”.
Furthermore, SDG indicator 15.7.1 uses the “value of a species-product unit derived from the weighted average of prices declared for legal imports of analogous species product units” (which is usually well below the true black-market value of the items seized). Hence, it aims to measure the loss caused by illegal activities in financial terms, but does neither inform on the number of seized poached and/or illicitly trafficked CITES/listed specimens, nor on the numbers of resulting losses in particular CITES/listed species populations (also due to the fact, that the indicator does not take into account that the increasing value of illegal trade can either reflect the growing number of illegally traded and seized specimens, or the increasing black market prices for species becoming gradually extinct, which affects the supply and automatically affects the unit prices).

Simultaneously, the exact data on the fauna population current numbers is never available, not even in case of all rare and threatened species, much less the widespread game species, even not always in developed countries. In result, the adverse effect of poaching on these fauna populations cannot often be estimated.

It should also be noted that SDG indicator 15.7.1, focused solely on traded wildlife, does not take into consideration other possible reasons for poaching than just the mercantile motivation, thus does not cover the whole spectrum of poaching phenomenon, as several globally threatened (and most often strictly protected) predatory fauna species (e.g., the snow leopard) are often subject to retaliatory killing by livestock herders.

Last, but not least, the current formulation of Target 15.7 as such is probably not enough comprehensive, as it solely refers to “protected species of flora and fauna”, thus completely neglects all fungi species (estimated at 2.2 million to 3.8 million species, many of which are protected in particular countries, while many medicinal species or some 200 species of hallucinogenic Psilocybin mushrooms do enjoy a great demand in the international black market).

Resulting from the above, even if a country does report on poaching and trafficking of protected species, most often the total amount of “revenues” deriving from e.g., collected fines for poaching acquired or the total number of revealed cases of law infringement in particular time series (years within the reporting period) is reported. Neither the financial nor criminal statistics would allow to estimate physical losses in particular protected species populations over the reporting period.

However, the reviewed countries usually tend to avoid responding to questions (either submitted in correspondence prior to the EPR mission, or during the mission interviews) related to e.g., poaching, as no Government would openly admit that it cannot fully control the situation.

Hence, the assessment of trends in protected species populations size (for which detailed information is necessary), and on setting and usage of the annual hunting quota (as in few EPR cases limited hunting on protected species is still allowed by the national legislation) remain the only ways to roughly estimate the number of poached animals. However, only roughly, as physical losses in protected animal species populations can also be caused by predatory species, either also protected by the national law, or widespread and non-protected ones (like e.g., the grey wolf).

**Coverage of Target 15.7 in 3EPR reports (since 2017)**

Target 15.7 was referred to in SDG-related boxes of the 3EPRs of all 6 countries in focus (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, and Uzbekistan) as well as in the draft 3EPR of Romania. However, the value of the SDG indicator 15.7.1 (or any similar nationalized indicator) has never been provided.

**Target 15.7 achievement on the basis of the 3EPRs**
The 3EPR SDG-related box for **Albania** noted that due to widespread “illegal hunting” (that means poaching) in 2014 the Government imposed a ban (moratorium) on hunting, and in 2016 extended it for the next five years. And that “according to various sources, the ban has been successful and has already brought positive results”.

However, an EPR expert should never believe in similar statements, which cannot be verified on the basis of credible data, as the above-mentioned effectiveness of the hunting moratorium in preventing poaching in protected species of fauna can easily be questioned.

First of all, “illegal hunters” most probably pay little attention to the 2014 moratorium on (legal) hunting, as their activity is illegal by definition, and when carrying it out they pay no attention to laws penalizing poaching. Secondly, such positive results could only be confirmed by the analysis of trends in populations of species concerned. In case hunting is effectively put on hold (as a result of a moratorium), and no major natural disasters or epidemic occur (like e.g., the livestock-transmitted contagious virus, which in 2016 seriously affected the Mongolian saiga antelope population, causing rapid near-catastrophic herd depletion by over 50 per cent) – the decreasing species population numbers could indicate poaching as the most likely reason for this decline.

Moreover, the 3EPR Chapter 9 (on biodiversity, forestry and PAs) did not refer to the population numbers and recent trends in populations of protected species (or widespread game species, which are usually the main subject to poaching). It should be noted here that such data were made available for the previous EPR of Albania (see: Table 8.3: Populations of the main wild fauna species, 2002 and 2010, 2EPR). Furthermore, according to 2EPR, in 2009 the number of hunters registered in hunter associations in Albania amounted to some 17,000 people (most probably having no inclination to become vegetarians). Hence, the moratorium imposed in 2014 on (legal) hunting could possibly turn some of these 17,000 hunters into poachers, thus the measure applied would bring completely opposite results than expected in Albania, by increasing the scale of poaching as a substitute for licensed hunting.

As for **Bosnia and Herzegovina**, the SDG-related box noted the missing regulations and administrative framework for the implementation of the CITES, but not on the scale of poaching and trafficking of protected species. The 3EPR Chapter 5 (on the implementation of international agreements and commitments) noted the decrease in illegal hunting, resulting from the intensification (since 2013) of the monitoring of illegal activities, better cooperation with local communities, and the establishment of hunting associations and the police.

However, the same Chapter 5 also states that “Bosnia and Herzegovina has no provisions in place at either the state or entity level aimed at combating the illegal killing of birds. There were no actions aimed towards the conservation of bird species and implementation of measures, including legal measures, to reduce and monitor illegal hunting, taking and trade of wild birds”, so that the above-mentioned decrease in illegal hunting must have concerned other fauna species than birds. Similarly as in the case of Albania, 3EPR Chapter 11 (on biodiversity and PAs) of Bosnia and Herzegovina did not inform on the population numbers and recent trends in populations of fauna species, which could possibly confirm the reported decrease in illegal hunting.

According to the 3EPR SDG-related box of **Kazakhstan**, official statistics providing credible numbers of specimens of particular protected flora and fauna species illegally collected or poached were generally not available in the country. Nevertheless, the number of poaching cases is reported to be constantly declining. 3EPR Chapter 9 (on biodiversity and PAs) analyzed long-term (1990–2017) trends in populations of ten globally threatened mammal species occurring in Kazakhstan (Table 9.1: Globally threatened mammal species population dynamics) where trends for nine species were either growing or stable (only the population of the Himalayan brown bear subspecies seemed to be decreasing). The moratorium on hunting critically endangered saiga antelope was imposed, while some other threatened fauna species still listed as game species in Kazakhstan were not hunted, while the quota for hunting the brown bear (allowed only in one region) was well below the maximum acceptable rate. As for the 8 analyzed globally threatened bird
species, recently (2008–2016) the growing trend in populations was observed for six species, stable in one case, and rapidly declining also in one case. Moreover, Chapter 9 analyzed recent (2008–2016) trends in populations of ten widespread game species, which were all significantly growing in numbers. The above should be interpreted that not only the annual hunting quotas were set at a very reasonable level (allowing for the regeneration of wildlife populations, but also for their continuous increase in numbers) but also that poaching on several species (either for subsistence purposes or the highly profitable illegal trade in wild animals) which is kept at the low level, due to effective law enforcement, did not significantly threaten the maintenance of the majority of protected species.

Despite that the SDG-related box of Mongolia did not provide the value of SDG indicator 15.7.1 due to the non-availability of data. EPR Chapter 11 (on biodiversity and PAs) contains an analysis of trends in populations of both protected and game species (despite that data series for many species were available only until 2010, when the last national wildlife census was conducted). Population trends for species locally most affected by poaching (e.g., the wild Bactrian camel, saiga antelope, snow leopard, argali sheep, Mongolian gazelle, goitered gazelle) have been analyzed in detail, which allows to roughly assess the impact of poaching.

In case of North Macedonia, the SDG-related box could not assess the scale of poaching and illegal trade in protected species due to the general lack of data on fauna species, resulting from the absence of the national biodiversity monitoring system. Furthermore, no national red lists of threatened species have been adopted prior to the 3EPR. However, 3EPR Chapter 11 (on biodiversity and PAs) indicated the main rare (incl. regionally endemic) and threatened species which populations were declining due to poaching, as well as excessive hunting. According to the 2018 NBSAP for 2018–2023, scientific studies on the status of game species populations for the purpose of setting more appropriate hunting quotas is planned between 2019 and 2022 (which accomplishment should possibly be verified under the fourth EPR cycle).

Chapter 11 of the draft 3EPR of Romania noted that no data on traded wildlife that was poached or illicitly trafficked were available to be able to assess the state of affairs in achieving the SDG target 15.7, but also that the average annual frequency of revealed and reported law infringements by using traps, poisoning and poaching in Natura 2000 sites in Romania (Table 11.7) accounted for 146 cases (while the dark figure of hidden crime must be higher). Furthermore, Chapter 11 indicated that fish poaching takes place along the Danube, other rivers, and in the Danube Delta area, and that the most dangerous poaching method is electric fishing (which not only destroys a significant number of young specimens, it causes the sterility of mature specimens that survive). 3EPR Chapter 6 also noted that it is difficult to assess the country’s progress towards the achievement of Target 15.7 in the absence of data on the values of legal and illegal trade and recommended the collection of relevant data (Recommendation 6.6). Despite the above, Chapter 6 stated in its Assessment that “Romania has made an effort to achieve the SDGs targets 15.7 and 15.c” (which might not yet be an adequately justified statement).

The 3EPR SDG-related box for Uzbekistan mentioned the establishment of quotas on the procurement of wild species of animals which is considered there to be the most efficient arrangement for mitigating the level of poaching. 3EPR Chapter 11 (on biodiversity and PAs) noted that poaching was one of the reasons for the decline in populations of some 69 per cent of game mammal species, as well as 56 per cent of rare and threatened protected mammal species occurring in Uzbekistan. Trends in populations of both protected and game species, as well as the trends in determining and the use of the annual hunting quota for game species (separately for mammals and birds) have also been analyzed in 3EPR, which allowed to assess the status of these widespread fauna species (which are most often affected by poaching for subsistence purposes).
Conclusion:

Target 15.7 achievement can be assessed on the basis of the 3EPRs for all 7 countries, with negative results in 6 out of 7 cases (the meaningful progress can be noted only in Kazakhstan).

However, such assessment can hardly be done in the SDG-related box (focused on the SDG indicator 15.7.1 which has never been provided in the analysed cases).

Resulting recommendation for the fourth EPR cycle:

The proper assessment of Target 15.7 achievement requires e.g., the evaluation of protected species' conservation status (based on the analysis of recent trends in species populations) confronted with the state policy on hunting, mechanisms for setting the annual quota (including sources of data on game species populations), and the rate of use of such hunting permits (which would then allow to estimate the actual influence of poaching on fauna populations).

Coverage of Target 15.7 in Voluntary National Reviews

Morocco briefly described its progress relevant to the achievement of SDG Target 15.7, while Kazakhstan only provided its own national indicator (however not related to traded wildlife that was poached or illicitly trafficked).

Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Montenegro, North Macedonia, Republic of Moldova, Romania, Serbia, and surprisingly also Tajikistan and Uzbekistan (where poaching and the trafficking of species constitutes a major challenge) did not refer to SDG Target 15.7. (Romania mentioned ‘poaching’ once, among other threats on VNR, but did not further elaborate on this issue).

Target 15.7 achievement on the basis of VNRs and additional information provided in 2020 by countries

In Appendices to the VNR, Kazakhstan provided values of its national indicator “number of rare and wild ungulates” for 4 species (all with growing trend) replacing the SDG indicator 15.7.1. However, the reported numbers do not concern the number of specimens of wild ungulates poached or traded (and later seized), but the population numbers of living specimens of these species in 2010, 2015, and 2018 (thus partly updating previously mentioned 3EPR Table 9.1).

In 2020, in the course of the self-assessment the Republic of Moldova indicated its 2020 Statistics for Sustainable Development Goals report,\(^{345}\) according to which the number of recorded incidents of illegal fishing continuously increased in 2011–2017 (e.g., from 937 cases reported in 2011 to 1,428 in 2014 and 1,614 in 2017) and rapidly decreased in 2018 (to 973 cases), which was interpreted that the increase in 2011–2018 was only by 3.8 per cent (937 vs. 973). However, such interpretation (statistically accurate) neglects the 72.25 per cent increase in 2011–2017 (937 vs. 1,614). Furthermore, according to the 6CBD NR the total number of detected poaching cases in 2017 was 328, that constituted the total damage of 243.6 thousand MDL (Moldavian lei).

Morocco listed (VNR) efforts undertaken to prevent and control poaching and the trafficking of species of protected plant and animal species, which included the establishment of surveillance systems for wildlife, gradual creation of 19 monitoring and control units; strengthening the related legislation (Law No. 29-05 on the protection of flora and fauna species and the control of their trade, which was the basis for the elaboration of a list of specific Moroccan species, in addition to those covered by the CITES, and involvement of different stakeholders in the above activities.

Mongolia mentioned (VNR) increased trend in poaching.

In the course of the self-assessment carried out in 2020, Serbia indicated its 6CBD NR, which noted that illegal wild bird shooting included the killing and wounding of protected and strictly protected species, and cases of gamebird poaching. Cases of poaching and hunting with illegal methods and means were reported, with the use of live decoys, electronic calling devices and semiautomatic shotguns. As many as 840 cases of illegal shooting were registered since 2000, which affected 4,088 specimens of 89 bird species.

Conclusion:
Target 15.7 achievement can be assessed on the basis of VNRs solely for Morocco, with positive result.

Comparison of results of the 3EPRs and VNRs analysis: the reluctance of the majority of the 3EPR countries to report on Target 15.7 achievement results from the fact that the Governments were not even in a position to assess the scale of these illegal activities, much less prevent or mitigate poaching and the trafficking of species.

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

- Indicator 15.c.1 Proportion of traded wildlife that was poached or illicitly trafficked

Coverage of Target 15.c in 3EPR reports (since 2017)

Target 15.c was mentioned in SDG-related boxes of the 3EPRs only in case of Mongolia and Uzbekistan, as well as in the draft 3EPR of Romania. However, the value of the SDG indicator 15.c.1 (or any similar nationalized indicator) has never been provided.

Target 15.c achievement on the basis of the 3EPRs

The SDG-related box of Mongolia referred to the similarity to Target 15.7, and in this context noted that Mongolia has achieved much in terms of increasing the capacity of local communities to pursue sustainable livelihood opportunities, through the application of the community-based PA management and forest management approaches, which substantially reduce illegal practices such as poaching and illegal logging.

Chapters 6 and 11 of the draft 3EPR of Romania mention the absence of data on traded wildlife that was poached or illicitly trafficked, and the values of legal and illegal trade, which did not allow to assess the country’s progress towards the achievement of Target 15.c.

The SDG-related box of Uzbekistan (concerning Targets 15.7 and 15.c) referred to obstacles for determining the values of both similar indicators, to the previously mentioned establishment of quotas on the procurement of wild species of animals as efficient measure, and actions which are required in order to improve the situation in the future.

Conclusion: Target 15.c achievement cannot be assessed on the basis of the 3EPRs separately from Target 15.7.

Resulting recommendation for the fourth EPR cycle:

The community-based PA management and forest management approaches referred to in the SDG-related box of Mongolia indicate the set of effective measures for mitigating illegal activities (incl. poaching), which should probably be promoted as a best practice example, to be shared with the other reviewed EPR countries.
Coverage of Target 15.c in Voluntary National Reviews

The coverage of Target 15.c in VNRs is the same as for Target 15.7 (only Kazakhstan, Mongolia and Morocco referred to poaching and trafficking of protected species).

Target 15.c achievement on the basis of VNRs

Conclusion:

Same as Target 15.7, Target 15.c achievement can be assessed on the basis of VNRs only for Morocco.

Target 15.8

Target 15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of IAS on land and water ecosystems and control or eradicate the priority species.

Please note, that the SDG Target 15.8 corresponds with the Aichi Biodiversity Target 9 “By 2020, IAS and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment”.

- Indicator 15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species
  

Methodological remarks

Similarly as in the case of previously commented SDG indicator 15.6.1, this SDG indicator 15.8.1 seems to be an international indicator, not monitored at the national level. As this “yes or no” indicator determines only whether the respective country has adopted related legislation and is adequately resourcing the prevention or control of IAS (or has not yet done so), the EPR reports try to evaluate whether such activities (if undertaken) are sufficient enough to ensure the achievement of the desired result.

However, it should be noted that SDG indicator 15.8.1 includes two conditions that should be fulfilled simultaneously (adoption of national legislation, and adequate resourcing), as the methodology states that “adequate resourcing is vital to ensure implementation and effective delivery of targets set”.

Hence, adoption of the legislation alone does not yet mean the successful achievement of this SDG indicator (which, in turn, does not tell much on the effectiveness of measures undertaken in particular country towards preventing the introduction and spread, and significantly reducing the impact of IAS.

Coverage of Target 15.8 in 3EPR reports (since 2017)

The position of a country vis-à-vis SDG Target 15.8 was described in SDG-related boxes for all 6 countries in focus (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, and Uzbekistan), and only mentioned in the draft 3EPR of Romania.

Target 15.8 achievement on the basis of the 3EPRs

The 3EPR SDG-related box of Albania mentioned the 2009 Government decree on IAS, prohibiting import of some alien species. The box also includes some contradictory statements, e.g., by stating that IAS “are not considered a major threat to the biodiversity in Albania”, and that “the current percentage of invasive flora species is the lowest in Europe”, while the next sentence noted that no research on IAS has been conducted, due to the lack of financial and human resources (which clearly means that the prevention or control of IAS has not yet been adequately resourced). However, the same Chapter 9 (on biodiversity,
forestry and PAs) mentioned the project on invasive species in Albania, funded by the World Bank in 2007, and lists 38 new invasive flora species, 47 invasive fauna species, and 20 IAS among sea organisms (which clearly means that some research has been conducted). It should also be noted here that the term "invasive species" used in Chapter 9 did not necessarily mean IAS, as many native species can also be invasive.

As for Bosnia and Herzegovina, despite that 3EPR Chapter 11 (on biodiversity and PAs) listed IAS among the major threats to biodiversity of the country, the SDG-related box noted that the lists of IAS were not yet in place, and that Target 10 of the NBSAP is to prepare strategies related to invasive species by 2018 (hence, NBSAP Target 10 accomplishment should possibly be verified under the fourth EPR cycle). The overall progress was evaluated as partial, despite that no information on the adoption of relevant national legislation or resourcing the prevention or control of IAS was provided in 3EPR.

The 3EPR SDG-related box for Kazakhstan noted that provisions aimed at preventing the introduction of alien species have already been incorporated into the national legislation (e.g., the Environmental Code, Forest Code, Law on Specially Protected Areas, and Law on Protection, Reproduction and Use of Fauna). However, these were not followed by measures on the IAS control or eradication, and a state monitoring programme on IAS was not in place.

According to EPR, Mongolia has already adopted relevant legislation, provisions concerning IAS have been incorporated into the 1995 Law on Natural Flora and 2012 Law on Fauna. However, the SDG-related box mentioned that their implementation is hampered by the lack of data on the import channels and distribution of such species, as no research on IAS has so far been undertaken (which clearly means that the prevention or control of IAS has not yet been adequately resourced).

As for North Macedonia, the 3EPR SDG-related box noted that, although the 2004 Law on Nature Protection contains provisions related to the prevention of introduction of IAS, control of their populations or their eradication, but not much data on IAS was available, no related national monitoring system was in place, and no measures have been implemented. However, the 2018 NBSAP for 2018–2023 includes Target No. 8 “Develop and establish appropriate policy for recording, control and protection of non-native and invasive species” and defines several actions to be undertaken (hence, NBSAP Target 8 accomplishment should possibly be verified under the fourth EPR cycle).

Chapter 11 of the draft 3EPR of Romania mentioned that the implementation of the MO No. 979/2009 concerning the introduction of alien species, the interventions on invasive species and the reintroduction of native species would support the achievement of SDG target 15.8. However, it should be noted that the above Order was adopted in 2009 (hence well before 2EPR), while neither the national list of alien species nor any assessment on such species (e.g., these included in the Pan-European Inventory of Alien Species which is reported to be used as a reference) had so far been developed in Romania, as of 2020. The above means that, except for a series of research programmes (incl. e.g., the Monitoring System and Rapid Detection of Invasive Species) and the ongoing European funds financed project (expected to elaborate and prepare the national list of IAS for its official adoption) little progress has so far been achieved, over the last 11 years since the adoption of the 2009 Order.

Uzbekistan nationalized SDG indicator 15.8.1 in a way omitting the requirement on adequately resourcing the prevention or control of IAS. In 2018 the first list of non-indigenous (alien), introduced or invasive plant species naturalized in the country was compiled. However, the 3EPR SDG-related box noted that relevant national legislation has not yet been adopted. Moreover, 3EPR Chapter 11 (on biodiversity and PAs) noted that the Institute of the Gene Pool of Plants and Animals of the Academy of Sciences, which previously carried out scientific research on IAS, ceased to exist as a result of reorganization.
Conclusion:

SDG Target 15.8 achievement can be assessed on the basis of the 3EPRs for all 7 countries, with negative results in all cases.

Resulting recommendation for the fourth EPR cycle:

The assessment of progress made towards preventing the introduction and significantly reducing the impact of IAS by all above countries (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, Romania, and Uzbekistan), as well as all other reviewed countries should possibly be conducted under the future fourth EPR cycle.

Coverage of Target 15.8 in Voluntary National Reviews

Bulgaria briefly described its progress relevant to the achievement of Target 15.8.

The remaining 13 countries did not refer to Target 15.8. (Romania mentioned ‘invasive species’ once, among other threats on VNR, but did not further elaborate on this issue).

Target 15.8 achievement on the basis of VNR by Bulgaria, and additional information provided in 2020 by other countries

In the course of the self-assessment of the implementation of the 3EPR recommendations carried out in 2020, Bosnia and Herzegovina noted the development of the document “Inventory and Geographical Interpretation of Invasive Species in FBiH” in 2019, which is the basis for the adoption of action plans with measures to control and prevent the spread of invasive species (however, no information on the adoption of such plans was provided). Moreover, a Rulebook on the method for conducting a risk assessment and preparation of a risk assessment study for the introduction, reintroduction and cultivation of alien species and the licensing procedure for introducing alien species into the FBiH was adopted (OG FBiH, No. 102/15, 78/19).

Bulgaria reported (VNR) that a register of alien and non-native aquaculture species has been published to assess and minimize their potential impact on aquatic habitats, thereby supporting the sustainable development of the aquaculture subsector.

In the voluntary self-assessment of the achievement of SDGs by Georgia provided to ECE EPR team in 2020, the country noted that according to its national legislation, arbitrary relocation of wild animals to new habitats and introduction of alien species to Georgia’s wildlife is prohibited, same as introduction and cultivation of IAS in the forest and PAs, as well as in the surrounding areas (to prevent IAS spreading into the forest or PAs). The need for an effective control mechanism against IAS introduction, as well as their monitoring and inventory was identified, considering the fact, that prior to the elaboration of NBSAP, no detailed studies have been conducted on the impacts of most alien species on local ecosystems and biodiversity.

In the course of the self-assessment in 2020, the Republic of Moldova indicated its 6CBD NR, which noted that the Government Decision on Approval of the Regulation for Combating and Preventing the Spread of Ambrose Weeds and the Action Plan on the Implementation of the Regulation for the years 2019–2024 has been approved. Furthermore, the Institute of Forestry and Management (ICAS) carried out the analysis of the American maple (Acer negundo) tree stands in the Padurea Domneasca scientific reserve, in order to prepare the program of measures to combat its spreading. Moreover, in 2011–2014 the Institute of Zoology with the support of the National Ecological Fund project “Biological invasions and their impact on the diversity, structure and functioning of natural and anthropogenic ecosystems in the Republic of Moldova” developed the Registry and a list of animal alien species, including 149 species (12 mammal, 2 bird, 3 reptile, 4 fish, 6 mollusc, 1 crustacean, 11 arthropod, 67 insect, 1 trematode, 6 cestode, and 36 nematode
species). The above allowed to revise the list of the most dangerous invasive animal species for the Republic of Moldova (107 species, incl. 14 out of 55 globally most dangerous ones).

Serbia also indicated its 6CBD NR, informing that according to the last inventory of the invasive species of plants and animals, elaborated in 2016 under ESENIAS as many as 346 invasive species occurred in the country, incl. 165 species of invasive plants, and that a preliminary list of invasive plant species of Serbia incl. 68 taxa was developed in 2012, for drafting the regulation on invasive species, including proposal of measures for their treatment. Furthermore, the Novi Sad University and regional institute for nature conservation (INCVP) completed in 2012 a database of invasive alien neophytes for the Pannonian region (the northern part of the country) recording 45 invasive taxa occurring in natural habitats. As of 2019 there was no IAS monitoring system in place, but the control of invasive plants within PAs was supported by the national and regional funds.

According to additional information provided in 2020 by Uzbekistan, the Presidential Resolution “On measures to further improve the activities of the state plant quarantine service” adopted in 2020 foresees the development of a digital map of the distribution of invasive and quarantine plant species. The country was developing methodological data concerning invasive species.

**Conclusion:**

Target 15.8 achievement can possibly be assessed on the basis of VNRs only for Bulgaria, while additional information provided by some other countries in 2020 indicate that Bosnia and Herzegovina, the Republic of Moldova, and Serbia significantly progressed towards the achievement of Target 15.8.

**Target 15.9**

Target 15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

Please note, that the wording of SDG Target 15.9 is similar to the Aichi Biodiversity Target 2 “By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.”.

- Indicator 15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020
  

Please note that the wording of this indicator has recently changed (E/CN.3/2020/2, Annex II) to read as “(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 NBSAP 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”.

**Coverage of Target 15.9 in 3EPR reports (since 2017)**

Target 15.9 was mentioned in SDG-related boxes of the 3EPRs in case of 5 out of 6 countries in focus (except for Kazakhstan), as well as in the draft 3EPR of Romania.

**Target 15.9 achievement on the basis of the 3EPRs**

346 [www.esenias.org](http://www.esenias.org)
The 3EPR SDG-related box of **Albania** did neither refer to the 2016 NBSAP or the national accounting and reporting system, only states that some progress has been achieved in the integration of biodiversity conservation requirements into sectoral legislation, while similar integration with e.g., territorial planning (local spatial planning) has not yet been the case.

In case of **Bosnia and Herzegovina**, the box mentioned some 9 strategic documents adopted or drafted at the national and entity levels, and states that the biodiversity issues have been integrated in the Spatial Plans of the FBiH and RS as well as of local communities. Moreover, the NBSAP includes the relevant Target 2, aiming to integrate biological diversity values into development strategies and strategic plans, with an emphasis on rural development by 2020. Due to the above, Target 15.9 seems to be at least partly achieved. Nevertheless, the 3EPR SDG-related box ends with the recommendation that “To start fulfilling the implementation of Target 2 of the NBSAP, Bosnia and Herzegovina should prepare the Study on Economics of Ecosystems and Biodiversity and harmonize the existing and new development strategies, including poverty reduction, with national biological diversity targets, and integrate national biological diversity targets into existing and new spatial plans.”.

As for **Mongolia**, the EPR SDG-related box proves that there is still much room left for measures aiming to achieve Target 15.9, by using the practical example that no effective mechanism for the integration of PA management plans with the local land use plans (territorial land organization plans).

In **North Macedonia** its 2018 NBSAP did include national target No. 2 concerning the gradual integration of biological diversity values into the policies of economic development on the national and local levels (including poverty reduction, environmental accounting, national and local development plans). However, as at 2018 no positive examples of such integration of biodiversity values could be cited.

Chapter 11 of the draft 3EPR of **Romania** noted that “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.”.

According to the 3EPR SDG-related box of **Uzbekistan**, although relevant measures have been included in the 2019 NBSAP, again no positive examples of such integration of ecosystem and biodiversity values can be quoted. Moreover, Uzbekistan nationalized the global Target 15.9 by replacing it with a national indicator “Number of national, sectoral and regional strategies and programmes that take into account the value and safety of biodiversity and ecosystems”.

**Conclusion:**

Target 15.9 achievement can be assessed on the basis of the 3EPRs for 5 out of 7 countries (except for Kazakhstan), with a partly positive result solely for Bosnia and Herzegovina.

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress made towards the integration of ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts by all above countries (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, Romania, and Uzbekistan), as well as all other reviewed countries should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 15.9 in Voluntary National Reviews**

None of the 15 assessed countries referred to Target 15.9.
Target 15.9 achievement on the basis of additional information provided in 2020 by countries

According to additional information provided in 2020 by Georgia on its progress in achievement of SDG Target 15.9, “there are several targets established corresponding to the Aichi Biodiversity Target 2, especially the National Target A.3: By 2020, sustainable use and the economic values of biodiversity and ecosystems are integrated into legislation, national accounting, rural development, agriculture, poverty reduction and other relevant strategies; positive economic incentives have been put in place and incentives harmful to biodiversity have been eliminated or reformed”. However, Georgia did not elaborate on its progress towards the achievement of its national Target A.3

According to the 6CBD NR National Target A.3 includes five objectives and 21 actions, but none of the actions could be considered as fully implemented, and despite that the progress in implementation varies per objective, overall National Target A.3 is far behind of the implementation schedule, as most of its actions (even the ones which have been partially implemented) were supposed to be implemented in Georgia in 2014–2015.

The Republic of Moldova nationalized Aichi Biodiversity Target 2, hence SDG indicator 15.9.1 part (a) is positive (“yes”), However, according to its 6CBD NR the integration of biodiversity values was, as of 2018, progressing towards target but at an insufficient rate. A positive example of such integration of biodiversity values could be the creation and reconstruction of ecological corridors and forest strips for the protection of agricultural land and connection of forest bodies, under UNDP project “Integration of Biodiversity Conservation Priorities into Territorial Planning Policies and Land Use Practices in Moldova” (2015–2018), mentioned in 6CBD NR.

Serbia nationalized Aichi Biodiversity Target 2, hence SDG indicator 15.9.1 part (a) is positive (“yes”), but the progress towards the integration of biodiversity values can hardly be assessed on the basis of its 6CBD NR.

Conclusion:

Target 15.9 achievement cannot be assessed on the basis of VNRs.

Target 15.a

Target 15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.

Please note, that the SDG Target 15.a corresponds with the Aichi Biodiversity Target 20 “By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011–2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties”.

- Indicator 15.a Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems

Please note that the wording of this indicator has recently changed (E/CN.3/2020/2, Annex II) to read as “15.a.1 (a) Official development assistance on conservation and sustainable use of biodiversity; and (b) revenue generated and finance mobilized from biodiversity-relevant economic instruments”.

Coverage of Target 15.a in 3EPR reports (since 2017)
Target 15.a was referred to in SDG-related boxes of the 3EPRs of Albania, Bosnia and Herzegovina, and Mongolia, as well as in the draft 3EPR of Romania.

**Target 15.a achievement on the basis of the 3EPRs**

In **Albania**, according to the 3EPR SDG-related box, no financial resources were earmarked for PAs, nature and biodiversity conservation. However, the box simultaneously noted that the state budget did cover PA management costs and maintenance of equipment and infrastructure. PAs cannot retain revenues such were transferred to the state budget. Furthermore, available funding for biodiversity monitoring activities is insufficient.

3EPR SDG-related box of **Bosnia and Herzegovina** noted the presence of special environmental funds in its entities, regulated by the Law on the Environmental Protection Fund of the FBiH and the Law on the Fund and Financing of Environmental Protection of RS, and by other by-laws. Moreover, the country receives funding from numerous international donors, part of which supports biodiversity conservation. The NBSAP includes Target 20 towards the elaboration of a strategy for mobilization of financial resources by 2017.

Despite that Target 15.a is not referred to in 3EPR SDG-related box of **Kazakhstan**, its Chapter 9 (on biodiversity and PAs) noted that all PAs established as state nature conservation institutions have valid medium term management plans, which development and implementation were covered by the state budget, unless additionally supported by external sources (e.g., the UNDP), and provided examples of several most relevant international projects, supported by the WB GEF, UNDP or the German Federal Ministry for Economic Cooperation and Development (BMZ).

As for **Mongolia**, the SDG-related box noted that public funding available for the conservation and sustainable use of biodiversity and ecosystems in the country has recently diminished, which may impede the implementation of the 2015 National Biodiversity Programme for the period 2015–2020, and therefore the mobilization of external financial assistance is indispensable. EPR Chapter 11 (on biodiversity and PAs) further elaborated on the funding subject, confirming the statement in the SDG-related box, and informing that e.g., the level of funding by the Environment and Climate Change Fund for the implementation of different national biodiversity conservation programmes decreased significantly. Due to the above, external funding is indispensable, Chapter 11 provided numerous examples of projects funded by the Governments of Australia, Germany, the Netherlands, USAID, WB GEF, UNDP, WWF, the Nature Conservancy, the Wildlife Conservation Society, MAVA Foundation, ADB, and the KfW Development Bank.

Also for **North Macedonia**, the external funding sources were important, its 3EPR Chapter 11 (on biodiversity and PAs) mentioned several international projects, or projects supported by external funding sources, related to biodiversity conservation and PA management, funded by the EU IPA, the Swiss Agency for Development and Cooperation, WB GEF, GIZ, MAVA Foundation, and the Vulture Conservation Foundation.

Chapter 11 of the draft 3EPR of **Romania** noted that the country does not collect data on the SDG target 15.a, and that it does not report on this indicator. Additional information provided was that the governmental expenditures on natural resources and biodiversity amounted some €1.2 million in 2012, peaked in 2015 with €25 million, and then decreased to €0.4 million in 2017; and that these expenditures represent only 0.03 per cent of the total governmental environmental expenditures.

It should be noted that the above numbers refer to all state expenditures on “natural resources and biodiversity”, where the share of expenditures on the conservation and sustainable use of biodiversity and ecosystems is indefinite (which could also mean that almost all above funds were actually spent solely on “natural resources”, regardless how such are understood, and little or nothing was spent on biodiversity). Last, but not least, the above given amounts do not seem to be credible (probably not properly calculated and/or reported), as €0.4 million per year would probably not be sufficient to cover the state budget.
subsidies for NANPA (its main budget is provided by the Ministry, while only some 2–3 per cent is generated from the income from services provided by the PAs, and other taxes).

The 3 EPR Chapter 11 (on biodiversity and PAs) of Uzbekistan noted that the country has a special Fund for Ecology, Environmental Protection and Waste Management, and that the administration and management (including monitoring and implementation of protective measures) of PAs is predominantly financed from state budget allocations. However, some PAs receive no funding from the state budget. Moreover, the available state budget funding is insufficient to implement effective nature conservation, as (according to UNDP) the vast majority is spent on staff costs (salaries and associated taxes), much smaller per cent on recurrent operational costs, while some 1.5 to 2 per cent is left for infrastructure, equipment and capital costs.

**Conclusion:**

Target 15.a achievement can be assessed on the basis of the 3EPRs for all 7 countries, public funding for biodiversity conservation (more or less secured in Bosnia and Herzegovina and Kazakhstan) is supplemented by external funding sources in all cases (also in Romania, by using EU funds).

**Resulting recommendation for the fourth EPR cycle:**

As funding for biodiversity conservation has always been, and will always remain a challenge for most countries worldwide, confronted with a multitude of other urgent priorities, the assessment of the progress made towards mobilizing and increasing financial resources for the conservation and sustainable use of biodiversity and ecosystems by all above countries (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, and Uzbekistan), as well as all other reviewed countries should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 15.a in Voluntary National Reviews**

Morocco briefly described its progress relevant to the achievement of Target 15.a, Mongolia and Serbia provided the value of the SDG indicator 15.a.1, (Mongolia together with a brief analysis of the situation). Albania reported in 2018 that the alignment of SDG15 Targets was partial (25-50%, VNR) and provided some general data.

Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Montenegro, North Macedonia, Romania, Tajikistan, and Uzbekistan did not refer to Target 15.a

**Target 15.a achievement on the basis of VNRS and additional information provided in 2020 by countries**

Albania reported (VNR) that the level of public spending on SDG15 had constantly been increasing, from US$7.71 million in 2015, to 13.66 in 2016, and 16.55 in 2017.

According to official statistical data concerning Belarus, the value of SDG indicator 15.a.1 Total official development assistance for biodiversity (counted in millions of constant 2018 US$) intensively fluctuated, e.g., from negligible 0.00125 in 2000 to as much as 10.47724 in 2008, then dropped to only 1.00696 next year (2009, probably due to worldwide recession), peaked to 15.16246 in 2012, and immediately dropped to only 0.36893 in 2013, most recently was more or less stable (but low) in 2017 and 2018 (1.1176 and 1.28332 respectively).

In 2020, in the course of the self-assessment Georgia neither provided the value of the SDG indicator 15.a, nor noted the possible progress in the achievement of Target 15.a, instead indicated that “Information on this issue is available in the reports prepared under the Biodiversity Finance Initiative (BIOFIN) project”.

347 [www.biodiversityfinance.net/georgia](http://www.biodiversityfinance.net/georgia)
Most relevant would be “The Biodiversity Expenditure Review (BER) – Georgia”, according to which the ‘biodiversity spending’ in Georgia increased (nominally, counted in million US$) between 2013 and 2017, from 7.1 to 17.2 in the public sector, and 1.2 to 4.2 in the private sector (estimate), while the ‘donor’ (external support) fluctuated between 3.7 in 2013, 7.3 in 2014 and 6.7 in 2016 or 2017. In result, the total ‘biodiversity spending’ in Georgia increased from 12.0 in 2013 to 27.8 million US$ in 2017.

The Republic of Moldova mentioned (VNR) that funding for environmental protection purposes is insufficient and generally missing.

In the course of the self-assessment in 2020, the Republic of Moldova indicated its 6CBD NR, which noted that the Subprogram “Protection and Conservation of Biodiversity” is funded entirely from the financial sources of the National Ecological Fund (however no more detailed info, e.g., annual average amount was provided), and that several projects implemented in 2014–2018 were supported by World Bank GEF, UNDP, UNEP, Council of Europe, European Union, and the Austrian Development Agency (ADA), with the total external assistance amount of approx. €3 million. Supported projects concerned e.g., the creation of the Emerald Network, sustainable forest management, forest rehabilitation, integration of biodiversity conservation aspects into sectoral policies, and strengthening the capacity to promote the implementation of the Cartagena Protocol.

Furthermore, 6CBD NR noted that the implementation costs of actions resulting from the Strategy for Biodiversity Conservation for 2015–2020 (approved by GD no. 274 of 18 May 2015) undertaken in 2014–2018 (which dates could indicate that actions were conducted, and related expenses covered even prior to the approval of the umbrella Strategy?) accounted for MDL 20,703,410 (incl. MDL 12,233,800 from the state budget, which therefore covered 59.09 per cent of the above total).

However, it should be noted that 6CBD NR by the Republic of Moldova is not always enough precise when providing numbers and explanations related to funding, e.g., when saying “Thus, out of the total of 20,703.41 lei estimated for the period 2014–2018, the amount of MDL 12,233.8 thousand was allocated from the state budget (National Ecological Fund) and from external sources 60,000.0 thousand lei for the financing of the activities related to the protection and biodiversity conservation. In total, from the state budget and external sources, about 72,233.8 thousand lei were allocated for the period 2014–2018” (hence, the above could e.g., imply that out of MDL 60 million coming from external sources the amount of some MDL 8.5 million covered the remaining expenses on the implementation of activities foreseen in the Strategy for Biodiversity Conservation for 2015–2020, while a 6 times bigger amount of approx. MDL 51.5 million was spent on “activities related to the protection and biodiversity conservation” which were apparently not inscribed in the above Strategy, concerning biodiversity conservation).

Mongolia reported on the insufficient funding for environmental protection and rehabilitation: despite that during the previous 5 years revenue from natural resource use increased by 1.5 times, expenditure on environmental protection and rehabilitation increased by just 6 per cent. Simultaneously, the share of state budget expenditures on the above purposes decreased, from 37 per cent in 2013 to 27 per cent in 2017. Moreover, in Annex 2 to the VNR, Mongolia provided values of the SDG indicator 15.a.1, with a descending trend (67.7 in 2015 versus 54.1 in 2016, however no measure unit was stated), as well as the diagram comparing the amount of capital expenditure for conservation and rehabilitation of natural resources (descending trend) compared with the GDP growth rate (increasing since 2016), however the diagram did not necessarily match the information provided in the textual part of the VNR.

Morocco indicated that the budget allocated to the forestry sector increased by more than 70 per cent over the last decade, where funding for afforestation programme increased by 11 per cent between 2015 and 2019, while funding for anti-desertification and biodiversity protection measures increased in the same five-year period by over 30 per cent. Moreover, international cooperation and assistance funding mobilized throughout the last two decades accounted for almost US$200 billion (which included spending US$10

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348 [www.biodiversityfinance.net/knowledge-product/biodiversity-expenditure-review-ber](http://www.biodiversityfinance.net/knowledge-product/biodiversity-expenditure-review-ber)
billion each year on the forest sector, PA management, conservation of mountains, soils, and biodiversity as a whole, as well as many anti-desertification actions, combating poaching and illegal traffic of timber and CITES-listed species).

Serbia provided (in Annex 1 Statistical Review to its VNR) the value of SDG indicator 15.a.1 (Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems) measured in US$ million, with fluctuating trend (13.6 in 2010, 2.1 in 2011, 1.2 in 2012, 7.5 in 2013, only 0.4 in 2014, then 0.2 in 2015, and surprisingly as much as 20.9 in 2016).

In the course of the self-assessment in 2020, Serbia indicated its 6CBD NR, which noted that in 2012, 2013 and 2014 the Ministry allocated approximately €1.4 million annually to PAs (150 million dinars in 2012, 160 million dinars in 2013 and 2014), while for 2015 a total of about €1.7 million (210 million dinars) were allocated. The average share of PA funding from the state budget was around 25 per cent.

Conclusions:

Target 15.a achievement can only be assessed on the basis of VNRs for Mongolia, Morocco, and Serbia. Significant increase in financial resources on the conservation and sustainable use of biodiversity and ecosystems can be noted in case of Morocco.

Additional information provided by Georgia indicates a significant increase (at least nominally), however the proper assessment of the adequacy of amounts spent with the needs would require comparing the above encouraging picture with the outcomes of “The Financial Needs Assessment (FNA)” study for Georgia.\textsuperscript{349}

Comparison of results of the 3EPRs and VNRs analysis: the assessment based on the analysis of VNRs confirmed the negative findings of the 3EPRs for Mongolia, where external funding sources were indispensable.

Target 15.b

Target 15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation.

Please note, that the SDG Target 15.b corresponds with the Aichi Biodiversity Target 20 “By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties”.

- Indicator 15.b Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems

  Please note that the wording of this indicator has recently changed (E/CN.3/2020/2, Annex II) to read as “15.b.1 (a) Official development assistance on conservation and sustainable use of biodiversity; and (b) revenue generated and finance mobilized from biodiversity-relevant economic instruments”.

Methodological remarks

\textsuperscript{349} www.biodiversityfinance.net/knowledge-product/financial-needs-assessment-fna-0
It should be noted that Target 15.b concerns financing of sustainable forest management, while SDG indicator 15.b refers to expenditure on conservation and sustainable use of biodiversity and ecosystems (thus, not necessarily limited to forest biodiversity and forest ecosystems).

**Coverage of Target 15.b in 3EPR reports (since 2017)**

Target 15.b was referred to in SDG-related boxes of the 3EPRs of Albania, Bosnia and Herzegovina, and Mongolia. The draft 3EPR of Romania did not refer to Target 15.b.

**Target 15.b achievement on the basis of the 3EPRs**

The 3EPR SDG-related boxes of **Albania** noted a World Bank-funded project on the NFI, and on the amount of US$400 thousand disbursed among 24 communities for reforestation works.

As for **Bosnia and Herzegovina**, the box on Target 15.b noted the increase of the budget for silviculture works (incl. afforestation, support to natural regeneration, and melioration of degraded forests) in the FBiH, on the implementation (2014–2019) of a US$5.5 million GEF project for Sustainable Management of Forests and Landscapes in the FBiH, as well as on numerous international projects implemented in RS, and the World Bank-funded Forestry Development and Conservation Project.

In **Mongolia**, according to its EPR SDG-related box, as a result of the overall financial crisis/situation in the country, the annual state budget allocation for forest management activities (incl. afforestation, reforestation and other silvicultural activities) declined by 50 per cent in 2015–2016. The box provided a table with a detailed division of national expenditures of forestry management issues in the above period.

**Conclusion:**

Target 15.b achievement can be assessed on the basis of the 3EPR SDG-related boxes solely for Bosnia and Herzegovina (with a positive result) and for Mongolia (with a negative score).

**Resulting recommendation for the fourth EPR cycle:**

The assessment of the progress made towards mobilizing to finance sustainable forest management (including conservation of forest ecosystems, as well as reforestation) by all above countries (Albania, Bosnia and Herzegovina, Kazakhstan, Mongolia, North Macedonia, and Uzbekistan), as well as all other reviewed countries should possibly be conducted under the future fourth EPR cycle.

**Coverage of Target 15.b in Voluntary National Reviews**

Mongolia provided the value of the SDG indicator 15.b, together with a brief analysis of the situation. Morocco and Romania provided brief explanation.

Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Montenegro, North Macedonia, Serbia, Tajikistan, and Uzbekistan did not refer to Target 15.b (despite that Serbia provided extensive information on infrastructural investments on its VNR pages 80–84).

**Target 15.b achievement on the basis of VNRs and additional information provided in 2020 by countries**

In 2020, in the course of the self-assessment **Georgia** neither provided the value of the SDG indicator 15.b, nor noted the possible progress in the achievement of Target 15.b, instead indicated that “Information on this issue is available in the reports prepared under the Biodiversity Finance Initiative (BIOFIN) project”.

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350 [www.biodiversityfinance.net/georgia](http://www.biodiversityfinance.net/georgia)
Most relevant would be “The Biodiversity Expenditure Review (BER) – Georgia”, however, the number of resources allocated for financing sustainable forest management cannot be determined, as data provided in Table 6. Public sector biodiversity spending by national targets and Table 16. International donor organizations biodiversity spending by Aichi targets ranked by total spending are always aggregated accordingly to the CBD Aichi Target 7: Sustainable agriculture, aquaculture and forestry (hence, expenditures on sustainable forestry cannot be distinguished from those on sustainable agriculture or aquaculture).

Mongolia provided the value of the SDG indicator 15.b, which accounted 5.6 in 2015, 2.8 in 2016, and 5.8 in 2017 (however again no measure unit was stated), and the diagram (commented under Target 15.a).

Morocco indicated that the budget allocated to the forestry sector increased by more than 70 per cent over the last decade, while in 2015–2019 expenditures on the afforestation programme increased by 11 per cent.

The Republic of Moldova mentioned (VNR) that funding for environmental protection purposes is insufficient and generally missing, and that reforestation works were highly dependent on available short-term project funding (VNR).

In the course of the self-assessment in 2020, the Republic of Moldova indicated its 6CBD NR, which noted that external donors supported projects concerning sustainable forest management and forest rehabilitation.

Romania noted (VNR) that the state budget expenditures on the afforestation of degraded land in 2009–2017 accounted for RON 106.7 thousand (which equalled to €23,000, hence some €2,550 per year in average) and on the forest protection belts (including costs of feasibility studies and technical projects) in 2011–2017 for RON 1,755.18 thousand (thus some €379,200, or some €54,170 per year in average). Furthermore, under the Environmental Improvement Program 134 projects were approved, where in 2010–2017 the total value of completed projects accounted for RON 19,760,756.49 (some €4,269,100) while those in progress accounted for RON 56,407,384.78 (some €12,186,200).

Conclusion:

Target 15.b achievement cannot be assessed on the basis of VNRs, except for Mongolia, Morocco, and Romania.

Comparison of results of the 3EPRs and VNRs analysis: the 2019 VNR submitted by Mongolia noted, that the state budget allocation for forest management increased in 2017, and slightly exceeded the amount of 2015 (hence, the value before the financial crisis/situation in the country, mentioned in 3EPR).

351 www.biodiversityfinance.net/knowledge-product/biodiversity-expenditure-review-ber
3. General conclusions on the outcomes of the 3EPRs related to biodiversity and protected areas

3.1. Trends in biodiversity and protected area management

Species

In most of the 3EPR countries the extinction of threatened species (incl. regional or local endemics) has not yet been prevented, in result their conservation status is still far from favourable (hence, Aichi Target 12 was not achieved). Only few 3EPR countries seem to be well advanced or progressing towards the effective species protection, namely Belarus, Bulgaria, Kazakhstan, Mongolia, Romania, and Uzbekistan, provided the adopted species conservation action plans are effectively implemented, which should possibly be assessed under the fourth EPR cycle.

National species conservation action plans or programmes are, most probably, still missing in some 3EPR countries (Bosnia and Herzegovina, Montenegro, and Tajikistan), while at the time of the 3EPR Georgia and Tajikistan still allowed commercial hunting in species included in their Red Lists.

Much more attention is paid to globally threatened species than the regional and local endemics (including those requiring specific environmental conditions, e.g., glacial relict species increasingly threatened by climatic changes) despite that endemic species are usually even more threatened than the globally red-listed ones (some of which are still abundant in several parts of their biogeographical range). Mongolia and North Macedonia were, most probably, the only reviewed countries that adopted conservation action plans particularly targeted at endemic species. However, the regionally endemic Balkan chamois was still a hunted game species in North Macedonia, despite the decline in its local populations.

According to the 3EPRs, Belarus and Kazakhstan were most successful in maintaining the viable populations of widespread species and adjusting the annual hunting quota to the reported population numbers in a way that allowed not only for the regeneration of wildlife populations, but also for their continuous increase in number.

It should be reminded, that the abundance of widespread wild animals is decisive for the survival of numerous globally threatened and legally protected carnivorous species, while the decrease in the availability of prey species can lead to human-wildlife conflicts and retributive killing of predatory species by herders. Furthermore, the presence of carnivorous species helps to control the populations of wild herbivorous species, often causing major damages in agriculture and competing for forage with domestic
livestock, and damages in silviculture (by browsing on young seedlings of the forest-forming species). However, in some 3EPR countries the grey wolf is still considered as an ‘outlaw’ that can freely be hunted without any limits or permits, despite its regulatory functions in the ecosystem, important for the natural regeneration of forests, and the health status of other wildlife populations.

As for the IAS, Belarus and Bulgaria seem to be most successful among all 15 reviewed countries, within the 3EPR period both countries significantly progressed in identifying threats posed by IAS and reacting to such challenges, also by the development and implementation of IAS-related plans of actions (which implementation should possibly be assessed under the fourth EPR cycle).

Ecosystems and habitats

Numerous 3EPR reports paid much less attention to the state and restoration of ecosystems than to the protection of species diversity (despite that the conservation status of all species, including the threatened ones, largely depends on the state and viability of ecosystems harbouring their natural habitats).

Nevertheless, the 3EPR results confirm, that all main representative natural and semi-natural ecosystems, providing important ecosystem services, were increasingly threatened in all reviewed countries (regardless of whether located in e.g., South Eastern Europe, or Central Asia) by numerous anthropogenic pressures, as well as adverse effects of ongoing global climate changes.

In general, the loss of natural habitats (incl. forests) continues, their degradation and fragmentation has not been reduced (hence, Aichi Target 5 was not achieved). Natural ecosystems are still in decline, hence not yet effectively safeguarded, much less restored (contrary to Aichi Target 14). Areas under agriculture, aquaculture and forestry are not yet managed sustainably, which could ensure the conservation of their biodiversity (Aichi Target 7).

The most striking example of ecosystem degradation is the environmental disaster in the Aral Sea region (shared by Kazakhstan and Uzbekistan), which resulted in the shrinkage and partial disappearance of the sea itself (hence, the complete loss or irreversible alteration of the marine ecosystem) as well as nearby lakes in the Amu Darya delta, degradation of tugai forest and wetland habitats, which together caused the massive loss and rapid decline in biodiversity at the regional scale. In result, almost the entire marine ecosystem and a large part of coastal and wetland ecosystems were gradually replaced by the emerging sandy-salty desert ecosystem (the so-called Aralkum Desert, encompassing over 5.5 million ha). As the successful restoration of this lost marine ecosystem is no longer feasible, affected countries can only try to mitigate the adverse environmental effects of the Aral Sea disaster. However, due to the scarcity of available funds, at the cost of ecosystem restoration works (e.g., supporting the natural regeneration of existing forests) urgently required in other parts of both above countries.

Several 3EPR countries undertook costly large-scale ecosystem restoration measures, e.g., intensive forest restoration and rehabilitation works carried out in Kazakhstan, active restoration measures concerning riparian forest and wetlands in the Republic of Moldova, or the active restoration of aquatic, wetland, and tugai forest ecosystems in the Amu Darya River delta and the lower reaches of this river in Uzbekistan. Some other countries applied innovative approaches to natural resource management, such as the community-based forest management (contracting and licensing forest user groups) implemented in Mongolia with the aim to mitigate the effects of illegal logging and timber trade. The evaluation of results of the above activities remains a task for the fourth EPR cycles.

However, some negative and counter-productive examples can also be identified, e.g., the implementation of intensive melioration works for agricultural purposes in Belarus, which can further worsen the state of wetland and meadow ecosystems; the ecologically questionable use of non-native tree species for the restoration of forest stands in the Republic of Moldova and Tajikistan, or the application of perverse incentives for fruit tree planting at the cost of afforestation and forest ecosystem restoration in Tajikistan.
Only one third (5 out of 15) 3EPR countries achieved the Aichi Biodiversity Target 11 (setting the minimum quantitative threshold of conserving at least 17 per cent of terrestrial and inland water areas) by the end of 2020: Albania, Bulgaria, Mongolia, Romania, and Tajikistan. The “leader” in this respect was Bulgaria, with 34.92 per cent of the country under legal protection, however mostly due to the extensive size of its Natura 2000 network, as PAs of the “national categories” encompassed only 5.27 per cent. The special state PAs and local PAs in Mongolia encompassed 34.71 per cent of the country (hence, this indicator in Mongolia was lower by only 0.21 per cent point). Designation of Natura 2000 sites in Romania contributed to the 22.70 value of the indicator (while the share of national category PAs was only 5.85). Tajikistan (over 21.80 per cent) exceeded the ABT11 quantitative threshold prior to its formulation, due to the designation of one large-scale PA, Tajik state nature park, encompassing as much 18.25 per cent of the country). Although the comparison of data provided in 3EPR (of 2018), 6CBD NR (of 2019) and additional information provided in 2020 by Albania indicated that the total PA in the country recently decreased, the current value of the indicator (18.24 per cent) is above the ABT11 threshold.

The above examples of Bulgaria and Romania indicate that the obligation to designate Natura 2000 network in EU MSs usually results in an immediate increase of the legally PA, in particular when the progress in the spatial development of the network composed of PAs of ‘national categories’ had previously been slow.

In the other 10 3EPR countries more than 83 per cent of the territory remains outside PAs. Hence, the effective conservation of natural and semi-natural ecosystems and habitats, and legally protected species of flora, fungi, and fauna remains beyond the powers and responsibilities of PA administrations and related specialized state agencies.

As emphasized in methodological remarks to sub-section 1.5, the nomination and official designation of ASCIs (Areas of Special Conservation Interest) as parts of the Emerald Network established under the Bern Convention does not automatically mean any additional legal protection other than provided by the national legislation of the respective country. Therefore, whenever the per cent share of the total area of ASCIs (either already officially adopted or only nominated) in the territory of a country exceeds the indicator concerning legally designated ‘national category’ PAs, it clearly indicates the need to grant the legal protection to these new areas.

The above implies that Albania, Belarus, Bosnia and Herzegovina, Georgia, the Republic of Moldova, Montenegro, North Macedonia, and Serbia already identified such additional areas requiring legal protection but have not yet designated them as legally protected. The progress should possibly be assessed under the fourth EPR cycle.

It should also be noted, that in three 3EPR countries (Albania, Romania, and Tajikistan) the total area under spatial protection slightly decreased. In four 3EPR countries (Bosnia and Herzegovina, the Republic of Moldova, North Macedonia, and Tajikistan) no new Ramsar sites were designated since their 2EPR.

However, the progress in the designation of new PAs relates solely to the achievement of the quantitative part of the ABT11 indicator (spatial extent of national PA networks), not yet its qualitative components (effectively and equitably managed, ecologically representative and well-connected systems).

In the majority of the 3EPR countries, the operational capacities of PA administrations and related specialized state agencies as well as the available state budget funding are insufficient to ensure their effective management and full implementation of their management plans (incl. measures targeted at the conservation, restoration or recovery of particular ecosystems, habitats and species).

Several 3EPR reports indicated the need for the improvement of the representativeness of ecological networks (in terms of covering at least the best-preserved areas of all main natural ecosystems
representative of the particular country), and the inclusion of habitats of all legally protected rare and threatened species, so that the countries concerned are therefore well aware of such necessity. The progress should be assessed under the fourth EPR cycle.

Enhancing the ecological connectivity of the national PA network remains a challenge for most 3EPR countries. Successful ones include Bulgaria (where the designation of Natura 2000 network resulted in the emergence of a spatially well-connected ecological network), Kazakhstan (which designated 4 legally protected large-scale ecological corridors for fauna migrations), Montenegro (which gradually forms several large-scale ecological corridors), Belarus (which National Ecological Network includes 34 ecological corridors), and the Republic of Moldova (where the spatial layout of its Emerald Network largely improved the connectivity between PAs, while the creation and reconstruction of ecological corridors and forest strips for the protection of agricultural land and connection of forest bodies enhanced connectivity at the local scale).

The presence of the external buffer zones surrounding and protecting PAs has so far been confirmed only by the 3EPRs of Belarus, Kazakhstan, and Mongolia (possibly such were established also in some other 3EPR countries, but no related information was provided in 3EPR reports). However, Uzbekistan followed the 3EPR Recommendation 11.3 by establishing such zones for 3 PAs, while external buffer zones for 4 other PAs were planned for establishment by the end of 2020.

To summarize, taking into account all aspects of ecological network development which can easily be assessed (the total PA share in the country’s territory, presence of external PA buffer zones, spatial connectivity of the national ecological network, country involvement in transboundary PA complexes, designation of new PAs, Ramsar sites, ‘natural’ or ‘mixed’ World Heritage properties, and new UNESCO MAB Biosphere Reserves) the most successful 3EPR countries until 2021 were Bulgaria (despite the recent withdrawal of several UNESCO MAB biosphere reserves, but harbouring well-connected and extensive Natura 2000 network, providing for the highest share of legally PA in the country’s territory among all 3EPR countries), Mongolia (with ‘positive scores’ in all above mentioned aspects, and the highest share of state and locally designated PAs in the country’s territory), Kazakhstan (also with ‘positive scores’ in all aspects, including the legal designation of external PA buffer zones and ecological corridors, being on the right track to achieve the ABT11 target threshold), and Albania (despite the still missing spatial connectivity of its ecological network, and the recent decrease of IUCN cat. III PAs).

3.2. Commonalities in areas of concern

In addition to the aforementioned decline in species numbers and populations, loss of habitats, and degradation or disappearance of natural ecosystems, the main common areas of concern should be the environmental pressures being reasons of the above adverse trends.

According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES),352 the human activities directly responsible for the rapid decline in ecosystem health and biological diversity are, in order of global importance:

- changes in land and sea use (e.g., conversion of forests to agriculture)
- direct exploitation of species (e.g., fishing, hunting, poaching, illegal wildlife and the timber trade)
- climate change (which is a risk multiplier that exacerbates the impact of the other drivers)
- pollution
- invasive species.

As emphasized in sub-section 1.2, the adverse effects of land uptake for agricultural purposes and intensified agriculture on natural ecosystems and their biological diversity are common for all 3EPR

352 IPBES/7/10/Add.1.  https://ipbes.net/events/ipbes-7-plenary
countries. Land degradation as a result of soil erosion triggered by the decline or loss of vegetal cover, caused by unsustainable agricultural practices (e.g., overgrazing of pastures, excessive drainage of wetlands) and forestry practices is a common problem in several 3EPR countries.

Although urbanization and transport infrastructure development still have a limited effect on the natural ecosystems of some less densely populated EPR countries (e.g., Kazakhstan, Mongolia, Morocco, Tajikistan, Uzbekistan), the land uptake for agricultural and/or mining purposes is already a significant threat in most of them. Furthermore, several 3EPR countries (Albania, Bosnia and Herzegovina, Bulgaria, Kazakhstan, Montenegro, Morocco, North Macedonia, and Romania) face increasing demand for land suitable for residential, tourism and recreational infrastructure development in most attractive locations (incl. PAs).

Deforestation and illegal logging affected the forest ecosystems of the majority of the 3EPR countries (except for Belarus, Kazakhstan, and North Macedonia). Hunting and poaching were most effectively controlled in Belarus, Kazakhstan, and Mongolia, nevertheless poaching, illegal fishing, and illegal trade in wild species continuously affect the populations of numerous species, including those globally threatened and legally protected, in all 3EPR countries. According to the 3EPRs, NTFPs collection was not yet a threat only in Belarus, Kazakhstan, Mongolia, and Bulgaria (in the last the NTFPs collection was well regulated, organized and controlled).

Desertification (further enhanced by ongoing climatic changes) is most evident in countries which, due to their natural environmental conditions, are partly covered by desert and steppe ecosystems (Kazakhstan, Mongolia, Morocco, Uzbekistan, and southern regions of Tajikistan), but countries such as Albania, the Republic of Moldova, and Romania are also increasingly threatened.

Eutrophication affecting the environmental conditions of aquatic ecosystems occurred in transboundary lakes shared by Albania with Montenegro and North Macedonia, it was also observed in Belarus (fertilizers runoff, industrial livestock wastewater discharges), Republic of Moldova, Romania, and Serbia, as well as the Black Sea littoral zones in Bulgaria and Georgia (fertilizers runoff), Kazakhstan, Mongolia, Morocco, North Macedonia and Uzbekistan (livestock husbandry waste discharge) and Tajikistan (uncontrolled discharge of untreated wastewaters).

On the contrary, according to the 3EPRs, acidification was a serious problem only in Georgia (due to the use of acidic nitrous fertilizers), Mongolia (as a result of illegal gold mining operations), Romania and Tajikistan (airborne industrial pollution and TPPs’ emissions).

The effects of IAS spread have not yet been adequately researched in most 3EPR countries.

Another common challenge are the habitats’ fragmentation and adverse effects of man-made barriers restricting species migrations, resulting from the development of energy installations and infrastructure. In Georgia some PAs were affected by the withdrawal of their lands for the construction of an oil terminal and an HPP, while environmental pressures resulting from HPP development are also common in Albania, Bosnia and Herzegovina, Bulgaria, North Macedonia, Tajikistan and Uzbekistan.

HPPs often constitute significant barriers for the seasonal migration of fish species, while the construction of fenced linear transport infrastructure increases the fragmentation of natural habitats and prevents the migrations of large mammal species, also transboundary ones (in like manner as the fenced state borders of the Russian Federation and of China with Mongolia). An example could be the Beyneu–Shalkar railway in Kazakhstan, which construction and fencing blocked the saiga antelope transboundary migration route to Uzbekistan, although the seasonal occurrence of this “regional flagship species” was one of the main reasons for the designation of the largest PA of Uzbekistan (Saygachiy CLR, 628,300 ha with an external buffer zone of 219,800 ha). The construction of highways in some 3EPR countries (Bulgaria, North Macedonia) resulted also in cases filed under the Bern Convention.
It should be noted that the effective country response to the above environmental pressures cannot be achieved solely by authorities responsible for environment.

3.3. Challenges and bottlenecks encountered in improving the management of biodiversity and protected areas

The main challenge common for all 3EPR countries is the need to effectively enforce the environmental laws currently in force, sufficiently integrate the requirements of ecosystem and biodiversity conservation into several sectoral policies (in particular those concerning mining, agriculture, forestry, urbanisation and infrastructure development), and efficiently implement the officially adopted biodiversity-related national strategies.

It should be emphasized, that the effective prevention, limitation, and mitigation of the adverse effects of different economic activities resulting in growing anthropogenic pressures on environment usually remains well beyond the competencies, powers, and operational capacities of authorities responsible for biodiversity conservation and the management of PAs.

Only in five 3EPR countries (Albania, Georgia, Mongolia, Romania, and Serbia) all responsibilities for the conservation of ecosystems, habitats and species were concentrated under one central authority. In remaining ten 3EPR countries the management of forest ecosystems and the use of forest resources (incl. hunting) was entrusted to another central state authority, while the management of non-forest ecosystems (e.g., wetlands, and grasslands used as pastures) most often remained within the scope of competencies of ministries responsible for agriculture.

Due to the above, the effective 'country response' to different environmental pressures has to be commonly agreed upon and implemented in cooperation by several relevant sectoral ministries and state agencies. However, as emphasized in sub-section 1.6.1, the effective inter-ministerial and interagency coordination was missing in some 3EPR countries.

Simultaneously, although the designation of PAs is the most effective tool (even regardless the often limited operational capacities of their administrations), such cannot be established in highly transformed man-made ecosystems (incl. urbanized areas) or extensive areas of semi-natural ecosystems intensively used for e.g., agricultural purposes, despite that the agricultural areas, the nearby built-up areas of human settlements, and even the centres of large cities provide excellent habitats for numerous threatened and legally protected wild species. 353

In 10 out of 15 EPR countries PAs encompassed less than 15 per cent of the total country’s territory (except for Albania, Bulgaria, Mongolia, Romania, and Tajikistan), while in all 3EPR countries the prevailing part of their territories remains outside PAs. Therefore, different ecosystem and species conservation measures stipulated by national legislation and strategies need to be implemented also in areas beyond the boundaries of legally designated PAs, where the management and use of natural resources is often regulated by the state authorities different than those responsible for environment and biodiversity conservation.

However, an obvious bottleneck would then be the lack of credible data on the current state of ecosystems, habitats and populations of threatened and legally protected species of flora, fungi and fauna, as at the time of the 3EPR the vast majority of reviewed countries conducted biodiversity monitoring activities solely inside PAs.

In result, the remaining (and always prevailing) non-protected part of the country's territory either remained “terra incognita” in terms of researching the species occurrence, and monitoring trends in the size of species populations, or had been researched occasionally and irregularly. Some 3EPR countries tried to

353 https://citynaturechallenge.org/
fill such gaps in knowledge by undertaking periodic nationwide wildlife censuses (Mongolia, however discontinued since 2010) or cadastral works on flora and fauna conducted in sequence in selected administrative regions of Uzbekistan (thus neither continued nor verified in the following years). Another commonly implemented solution was to conduct the basic biodiversity monitoring by the state forestry units, although its scope and quality was not always satisfactory.

Only Belarus and Bulgaria had operational and effective national biodiversity monitoring systems in place at the time of their 3EPRs, while Bosnia and Herzegovina, and Uzbekistan were progressing in this direction.

**Forest ecosystems monitoring** was most advanced in Belarus, Bulgaria, Kazakhstan, the Republic of Moldova, Mongolia, Romania, and Serbia. Several 3EPR countries (Albania, Georgia, North Macedonia, the Republic of Moldova, Tajikistan and Uzbekistan) did not have updated national forest inventories, although at the time of the 3EPR Albania and Montenegro were progressing in this respect, while Georgia launched the works on its new NFI in response to 3EPR Recommendation 11.1.

The absence of national biodiversity monitoring systems, or discontinuation of nationwide biodiversity research automatically result in obstacles for the development of sound information-based policy and decision-making. For example, as hunting is performed in all reviewed countries, the immediate question is how are the annual hunting quotas set in countries which have little information on their populations of widespread game animals?

Similarly, as the information on IAS presence and spread was either missing or quite limited in the vast majority of the 3EPR countries, the proper understanding of the IAS-related threats and planning adequate measures by relevant authorities was impossible. In result, as the IAS identification has not yet significantly progressed, the prevention of their introduction, control or eradication of their populations was not possible (contrary to Aichi Target 9).

To summarize, the shortcomings of biodiversity and forest monitoring common in several 3EPR countries constitute a critical bottleneck for the elaboration and adoption of sound and effective evidence-based conservation policies, including the proper identification of challenges, prioritizing and planning an adequate country response, which prevents undertaking any measures in the field.

Recommendations concerning possible improvements in monitoring were addressed to the vast majority of the 3EPR countries (except for Belarus) and still remain a challenge to most countries (see sub-section 2.1). It should also be emphasized, that the lack of data and information is an important impediment for the whole EPR process, making the proper assessment of the status and trends in species impossible.

Furthermore, the **policy framework** relevant to ecosystem restoration was not always complete, as e.g., at the time of the 3EPR some countries (Bulgaria, Kazakhstan, and Uzbekistan) had no valid NBSAPs, required by the CBD. It should also be noted that the implementation of NBSAPs adopted in most EPR countries is usually self-evaluated (e.g., in CBD NRs) as non-satisfactory, while the self-assessment of the effectiveness of other biodiversity-related officially adopted policies and strategies is usually not conducted by the countries (which is again an impediment for the EPR process), preventing their adjustments and modifications, which could then allow a better performance and more effective country response in the future.

Despite that all 3EPR countries are Parties to the 1971 Convention on Wetlands of International Importance Especially as Waterfowl Habitat, the national wetlands policy, or programme for wetlands conservation (required by the Ramsar Convention Strategic Plans for 2009–2015 and 2016–2024) were most often missing.

The only exceptions were the 2009 Strategy on Implementation of the Ramsar Convention in Belarus (which implementation included the designation of Ramsar sites, development and updating of national
waterfowl species management plans, and introducing a ban on spring hunting for waterfowl in 32 wetland areas), the National Action Plan for Conservation of Wetlands of High Significance in Bulgaria for 2013–2022, and the recently adopted National Wetlands Strategy 2015–2024 and resulting Action Plan in Morocco. However, the assessment of the effective implementation of such policy documents remains a task for the fourth EPR cycles.

In the light of the above, it is obvious that the “business as always” scenario might not be enough in the near future, and more efforts will be required.

3.4. Lessons learnt, country experience and best practice examples

Lessons learnt

The comparison and analysis of the substantive scope, factual coverage, contents, and findings of the 3EPR reports for the 15 reviewed countries, and the assessment of the state of implementation of 363 biodiversity and PA related recommendations made since 1EPR allowed to formulate numerous conclusions resulting from “lessons learnt”, such were usually grouped either under the “Methodological remarks” or “Resulting recommendations for the fourth EPR cycle” headings, accompanying the relevant sub-sections of this assessment.

Country experience and best practice examples

The purpose of the below short section is to indicate and emphasize the progress made by several 3EPR countries, with the view to encourage the sharing of experience and best practice examples with the other countries, also seeking for efficient solutions to common challenges concerning biodiversity conservation and PA management.

In order to facilitate these expected transnational exchanges and cooperation, such examples were grouped under headings corresponding to the thematic headings used in sub-section 2.1 for the thematic breakdown of EPR recommendations related to biodiversity and PAs, addressed to the Governments of the 3EPR countries since their first EPR. Although the same sequence of such thematic headings was kept as in the aforementioned sub-section, some headings are absent below.

In few cases the gaps in current knowledge on the progress achieved by particular 3EPR countries were highlighted.

Species

Several 3EPR countries such as e.g., Belarus, Bulgaria, and Mongolia gathered extensive expertise and experience from the elaboration, adoption, and implementation of numerous national action plans concerning the conservation of rare and threatened wild plant and animal species.

Belarus, Kazakhstan, Mongolia, and Uzbekistan can probably share with the other 3EPR countries their expertise gathered in the course of wild native fauna species recovery and re-introduction programmes (concerning e.g., the European bison, saiga antelope, Przewalski’s horse, Asiatic wild ass, Bukhara deer, goitered gazelle, Bukhara urial, Bukharan markhor, and the Asian houbara bustard), including the establishment of species breeding centres and nurseries for ex-situ conservation.

As for the conservation of flora species, an inspiring example for the other 3EPR countries could probably be the solution implemented by Mongolia, which duly considered the need for ensuring the protection of threatened plant species also outside PAs, by defining other types of “areas important for maintaining environmental and ecological balance”, where the use of all flora species for commercial purposes is prohibited (including green zones in cities, villages, and other settled areas; areas within 2 km range of the source of a river or stream and the bank of a lake or pond, extremely rare animal habitats, oases, areas
with degraded plant cover, areas important for protection from sand movement, and soil erosion protection strips).

Please see also another best practice example concerning flora species conservation in Bulgaria (described below under the “PAs and ecological networks" heading).

Pressures

Belarus and Bulgaria were most successful in identifying threats posed by the spread of the IAS and reacting to such challenges, also by the development and implementation of IAS-related plans of actions.

Mongolia applied the community-based participatory PA and forest management approaches, e.g., by contracting and licensing forest user groups, with the aim to mitigate the adverse effects of illegal activities (incl. poaching, illegal logging and timber trade), which resulted also in a decreased number of steppe and forest fires.

Bulgaria could probably share with the other 3EPR countries its experience concerning the effective regulation, organization and control of the NTFPs collection and harvesting.

Monitoring

Belarus and Bulgaria had operational and effective national biodiversity monitoring systems in place already at the time of their 3EPRs. Another best practice example, worth recommending to the other reviewed countries, comes from Bulgaria, where 166 most threatened natural habitats were not only identified, but also officially included in the national Red Data Book, which can largely facilitate the proper prioritizing and elaboration of corresponding national ecosystem and habitat conservation action plans.

Several 3EPR countries could probably benefit from the experience concerning the effective implementation of forest ecosystems monitoring systems in Belarus, Bulgaria, Kazakhstan, the Republic of Moldova, Mongolia, Romania, and Serbia.

Protected areas and ecological networks

An inspiring example comes from Bulgaria, where a network of 58 small protected sites (“microreserves”) covering around 1,000 ha in total was established in 2011–2015 under the EU Life+ Programme with the objective to preserve spatially isolated populations of 47 species of Bulgarian flora (44 vascular plant and 3 bryophyte species).

It should be noted that similar measures were explicitly recommended under 3EPR to Kazakhstan (Recommendation 9.4, concerning the coverage of IPAs by the national PA network, and raising the legal protective status of complex and botanic “zakazniks”) and Tajikistan (Recommendation 8.2, concerning the designation of small nature reserves aiming at the protection of rare and endangered plant species), but the assessment of the effective implementation of the above recommendation remains a task for the fourth EPR cycles.

Another inspiring example comes from Mongolia, which allowed the management of PAs by contracted environmental NGOs or herder group associations (which approach proved to be successful in e.g., Hustai Nuruu National Park, Ikh Nart Nature Reserve, as well as Gulzat and Khavtgar local PAs).

As previously mentioned, the presence of the external buffer zones surrounding and protecting PAs was explicitly confirmed only by the 3EPRs of Belarus, Kazakhstan, and Mongolia. According to the information provided in 2020, Uzbekistan already progressed in the implementation of the 3EPR Recommendation 11.3 (addressed in the same 2020), by establishing such external protective buffer zones for 3PAs (Gissar,
Kitab, and Surkhan state nature reserves) and preparing the establishment of such for 4 other PAs (Chatkal, Kyzylkum, Nurata, and Zaamin state nature reserves) by the end of 2020. The above could possibly inspire the other 3EPR countries, which have not yet established such external buffer zones in order to enhance the conservation of ecosystems and biodiversity in existing PAs.

The majority of the 3EPR countries could benefit from the experience concerning the establishment of the well-designed ecological networks in Belarus (encompassing 3.37 million ha, including 52 core areas linked by 34 ecological corridors of either the European, national or regional significance) and Bulgaria (as a result of Natura 2000 network designation). Other countries particularly experienced in enhancing the ecological connectivity of their national PA networks are Kazakhstan (where 4 legally protected ecological corridors, jointly encompassing the total area of almost 3.28 million ha were recently designated and integrated with the spatial land use/management plans), Montenegro, and the Republic of Moldova.

It should be noted with concern, that the revision of the 1994 Law on Special Protected Areas currently in force in Mongolia, which was expected to provide the legal protective status to ecological corridors linking PAs, submitted to the Ministry of Justice and Home Affairs in November 2018, was returned for further refining by the working group, while the progress in the above legislative procedure is not known (also due to the fact that in 2020 Mongolia did not inform on the results of its self-assessment of the rate of implementation of 2018 EPR recommendations).

Legal

According to 2017 VNR by Belarus, the country was developing its national legislation concerning landscape diversity conservation, which is definitely a good practice example for the other 3EPR countries, although the progress is not known. Hence the evaluation of results remains a task for the fourth EPR cycle, similarly as in the case of North Macedonia, which 2004 Law on Nature Protection provided a legal basis for the protection of landscape diversity, valuation of landscapes and monitoring of their state, with a view to their possible proclamation as PAs, but most probably the absence of corresponding by-laws hampered the implementation.

It should be noted with concern, that similar initiatives concerning the legal protection of the landscape diversity turned out to be unsuccessful in the Republic of Moldova, where 3EPR Recommendation 9.4 (b) concerned drafting the law on landscapes. According to the 2020 self-assessment, the draft law on landscapes was not accepted, and in result a separate law on landscapes will probably not be adopted.

Significant progress was achieved in Kazakhstan, where e.g., the 2006 Law on Specially Protected Natural Areas, which was considerably upgraded in 2012, including e.g., the amendment adding Article 81 on ecological corridors, (immediately implemented in practice), and adding a new article on the key ornithological areas (IBAs). Moreover, in response to 3EPR Recommendation 9.1 Kazakhstan recently drafted the Law “On the Plant World”, expected to be submitted for the adoption by the Parliament by December 2020, which would then fill such obvious gap in its environmental legislation.

Another ‘best practice example’ was indicated in the 3EPR of Mongolia, which 1997 Law on Buffer Zones of Special Protected Areas included clear criteria for the designation of such zones, with a due consideration of the range, migration routes, and even the potential distribution range of rare and threatened fauna species (thus, not focusing solely on the current habitats and refuges of these species), as well as provided for the enhanced participation of local stakeholders in the management of buffer zones (also in the development and implementation of a “buffer zone management plan”).

Last, but not least, the legal requirement to provide preliminary protection of a natural area if the available data indicate that the area has characteristics of a PA, in case when the procedure for which protection has been initiated (present in the Law on National Parks of RS, the entity of Bosnia and Herzegovina), or the regulation that all sites with finalized studies concerning their protection, even if not yet formally
designated, shall be considered legally PAs (in force in neighbouring Serbia) are definitely good practice examples for the other countries.

It should be noted that similar regulations turned out to be ineffective in neighbouring North Macedonia, where the 2004 Law on Nature Protection was not enough precise to ensure the temporary protection for species being evaluated for their proclamation as strictly protected or protected, and for areas proposed for protection that were subject to procedures of valorization and proclamation as PAs.

**Policy**

Belarus, Bulgaria, and Morocco as the only 3EPR countries, which succeeded in the development of the national wetlands policies, could probably share their experience with the remaining 12 countries, where such policy documents (required by the Ramsar Convention Strategic Plans for 2009–2015 and 2016–2024) are still missing.

Another best practice example is the “Summary Conservation Action Plans” corresponding to the Red Lists and Red Books of Mongolia, which indicate measures required for the conservation of these red-listed species.

As emphasized in “methodological remarks”, the progress in the implementation of different relevant national policy documents is quite often not evaluated (e.g., on mid-term basis) by the countries themselves, which is an obvious impediment for the adjustments and modifications, so as to allow a better performance and more effective response in the future. However, in Serbia the 2009 Law on Nature Protection required the development of nature status reports every five years at the national, provincial and local levels (which would therefore largely facilitate such self-assessments) while, according to the information resulting from the voluntary self-assessment on the implementation of the 3EPR recommendations carried out in 2020 by Montenegro, the 2016 Law on Nature Protection provisions concerning NBSAP oblige to report on the implementation of the National Biodiversity Strategy on a biennial basis. The above Law requires to report on measures undertaken, analyze the progress in the implementation on the basis of performance indicators, and to consider possible modifications and improvements, towards the effective implementation of the NBSAP.

**Institutional**

With no doubt, the presence and involvement of specialised institutes (such as the Institute for Nature Conservation of Serbia, the Institute for the Protection of Cultural, Historical and Natural Heritage of RS in Bosnia and Herzegovina, or the Institute of Biodiversity and Ecosystem Research in Bulgaria) is crucial for the effective implementation of national policies concerning biodiversity conservation.

Similarly, the establishment of specialised state agencies, e.g., the NAPA in Albania, the Agency of Protected Areas in Georgia, the National Agency for Natural Protected Areas (NANPA) in Romania, the State Institution of Specially Protected Natural Areas (currently subordinate to the Forestry Agency) in Tajikistan, or the State Committee on Ecology and Environmental Protection (SCEEP) in Uzbekistan could largely facilitate the efficient management of PAs, but only if such institutions are entrusted the responsibilities for the shaping and management of the entire national PA network (which is often not the case) as well as provided adequate human and financial resources, ensuring adequate operational capacities (which is never the case).

On the contrary, the legal setting of the Public Enterprise “National Parks of Montenegro” (PENP) or of the 5 public enterprises managing the 5 national parks (including forests inside NPs) in Serbia could imply that the own NP revenues (including those deriving from the harvesting of timber) should be enough to cover the expenditures on the implementation of their management plans (which should never be the case).

**Coordination**
An obvious best practice example, largely facilitating coordination in Mongolia is the positioning of the Ministry of Environment and Tourism as the main central administrative body responsible for the environment and nature conservation having the ‘core ministry’ legal status (hence, equal to ministries responsible for justice and internal affairs, finance, foreign affairs, defence, labour and welfare), which implies that its activities are cross-sectoral, and sectoral ministries shall duly implement the decisions taken and communicated by such a ‘core ministry’, which properly emphasizes the obvious dependence of numerous economic sectors on the favourable state of environment.

Another 3EPR country experienced in ensuring effective inter-ministerial coordination could also be Bulgaria, which established a number of bodies like the National Biodiversity Council, the Standing Interinstitutional Working Group on Biodiversity, or the Working Group on IAS (even despite the fact, that according to 3EPR, the influence of these bodies and their role in environmental policymaking was rather limited).

**Regulatory**

Romania has already adopted the compensation system for private forest owners which could be affected by PA-related limitations (although no such compensations had been paid so far), which example could possibly be followed also by the other 3EPR countries.

Furthermore, the 3EPRs indicate that Belarus, Bulgaria, Bosnia and Herzegovina, North Macedonia, and Serbia succeeded in the introduction of forest certification schemes, such as FSC and/or PEFC standards, while countries such as Mongolia and Romania are progressing in this respect.
4. Priorities related to biodiversity and protected areas for the future Fourth Cycle of the ECE EPR Programme

4.1. Foreseen trends and hot issues in biodiversity management for the next decade

Predicting the future is never an easy task (e.g., this assessment has been prepared during the COVID-19 pandemic and worldwide lockdown times, which commenced unexpectedly in early 2020, but can continue for months, years, or decades, see also sub-section 4.2.4).

However, foreseeing trends and hot issues in biodiversity management for the next decade (2021–2030) is much easier, it can be achieved by analysing both the past biodiversity conservation approaches (and results thereof, or the lack of such) as well as the recent milestones, current global trends, and the corresponding global responses, formulated mainly by the UN and MEAs, in particular under the CBD, as well as by analysing relevant strategies recently adopted at the regional level (e.g., by the European Union).

In the past, nature conservation policies were mostly focused on particular rare and threatened species or habitats.

A milestone in formulating a more complex approach was the United Nations Conference on Environment and Development, held in 1992 in Rio de Janeiro (also known as the Rio “Earth Summit”), when the 1992 CBD was opened for signature. Nowadays, the CBD has 196 parties (195 states and the European Union), including almost all UN member states (with the exception of the USA). In its preamble, CBD notes that the fundamental requirement for the conservation of biological diversity is the in-situ conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings.

In 2000, CBD COP5 acknowledged and endorsed the operational guidance, and recommended the use of the ecosystem approach, as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.

In 2001 the EU Summit adopted the “2010 Biodiversity Target” aimed at halting the decline in biodiversity by 2010, immediately up taken by CBD COP6 held in 2002 in Hague, which adopted the Strategic Plan for the Convention, aimed at achieving by 2010 “a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth”. Also, the World Summit on Sustainable Development held in Johannesburg in 2002 confirmed the 2010 Biodiversity Target and called for “the achievement by 2010 of a significant reduction in the
current rate of loss of biological diversity”. In 2003, Environment Ministers and Heads of delegation from the ECE region gathered at the fifth Ministerial Conference “Environment for Europe” adopted the Kyiv Resolution on Biodiversity and decided to “reinforce our objective to halt the loss of biological diversity at all levels by the year 2010”. The expectations for the success were high, moreover in 2006 the UN General Assembly declared 2010 as the International Year of Biodiversity, coinciding with the timeframe set for the achievement of the 2010 Biodiversity Target.

However, the implementation and its results were far below the expectations, and the global 2010 Biodiversity Target was not met. In the same year CBD COP10 adopted the 2010 CBD Strategic Plan for Biodiversity 2011–2020. In order to support the implementation of the above Strategic Plan and its 20 Aichi Targets, the UN General Assembly declared 2011–2020 the United Nations Decade on Biodiversity.

Numerous CBD Aichi Targets are highly relevant to EPR Chapter on biodiversity and PAs, in particular:

- **Target 5**: by 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.
- **Target 7**: by 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
- **Target 9**: by 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
- **Target 11**: by 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of PAs and other effective area-based conservation measures and integrated into the wider landscape and seascapes.
- **Target 12**: by 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
- **Target 14**: by 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and wellbeing, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
- **Target 15**: by 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
- **Target 17**: by 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated NBSAP.
- **Target 19**: by 2020, knowledge, the science base and technologies relating to biodiversity, its values functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

However, the timeframe of the 2010 CBD Strategic Plan for Biodiversity 2011–2020 has almost expired, which allowed the preliminary evaluation of its actual effects. According to the Global Biodiversity Outlook 5 (GBO-5), published on 15 September 2020 by the CBD “at the global level none of the 20 targets

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have been fully achieved, though six targets have been partially achieved (Targets 9, 11, 16, 17, 19 and 20).". The current situation is also well summarized in the 2020 Living Planet Report by the WWF.

The Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd indicated, that “States have failed to meet any of the Goals that they had established for protecting and conserving ecosystems and biodiversity. None of the 2010 targets of the Convention on Biological Diversity, 2020 Aichi targets or 2020 commitments of the Sustainable Development Goals have been achieved, although there has been modest progress”.

Such preliminary evaluation has also been formulated also at the highest political level, on 30 September 2020, when the world leaders virtually gathered at the first ever global Summit on Biodiversity, intended to build momentum for CBD COP15, postponed from 2020 to 2021 due to the COVID-19 pandemics. Many speakers acknowledged that none of the Aichi Biodiversity Targets established in 2010 were met during the United Nations Decade on Biodiversity, which concludes this year.

Mr. António Guterres, UN Secretary-General, said that the degradation of nature is not purely an environmental issue, but one that spans economics, health, social justice, human rights and geopolitical tensions and conflict. He also emphasized that biodiversity and ecosystems are essential for human progress and prosperity, and central to achieving the Sustainable Development Goals and implementing the Paris Agreement on climate change, yet none of the global biodiversity targets set for 2020 will be met. Ms. Elizabeth Maruma Mrema, CBD Executive Secretary, emphasized that the continued species decline and overall biodiversity loss will prevent the SDGs achievement, and warned that none of the biodiversity goals adopted 10 years ago will be met by the end of 2020. Ms. Angela Merkel, Chancellor of Germany, noted that the destruction of the environment, climate change and the loss of biological diversity are accelerating at an unprecedented pace, posing a threat to the quality of life, economic systems and social cohesion.

To summarize, the preliminary evaluation of the achievement of the CBD Strategic Plan for Biodiversity 2011–2020 is far from being positive and encouraging.

The above is also confirmed by the outcomes of the 3EPRs, which revealed that in most of the reviewed EPR countries:

- the loss of natural habitats (incl. forests) continues, their degradation and fragmentation has not been reduced (thus, contrary to Aichi Target 5)
- areas under agriculture, aquaculture and forestry are not yet managed sustainably, which could ensure conservation of biodiversity on these areas (contrary to Aichi Target 7)
- identification of IAS has not yet significantly progressed, much less the prevention of their introduction, control or eradication of their populations (contrary to Aichi Target 9)
- coverage of terrestrial, inland water, coastal and marine areas and ecosystems by PAs is still well below the threshold set by Aichi Target 11, while the national PA networks are not yet fully ecologically representative, much less well connected, and effectively managed
- the extinction of all threatened (as well as regionally or locally endemic) species has not yet been prevented, so that their conservation status is still far from favourable (contrary to Aichi Target 12)
- natural ecosystems are still in decline, continuously threatened by a number of pressures, hence not yet effectively safeguarded, much less restored (contrary to Aichi Target 14)

• 15 per cent (or more) of degraded ecosystems have not yet been restored (contrary to Aichi Target 15)
• the implementation of NBSAPs adopted in most EPR countries is commonly evaluated (e.g., in CBD NRs) as non-satisfactory, while in some 3EPR countries (Bulgaria, Kazakhstan, and Uzbekistan) such obligatory policy instruments as the valid NBSAPs are currently missing (contrary to Aichi Target 17)
• the status and trends in species and ecosystems cannot even properly be assessed in several EPR countries, as the absence of national biodiversity and forests monitoring networks, biodiversity information systems, regular nature (incl. forest) inventories, coordinated scientific research and exchange of research results remains a bottleneck in most EPR countries, preventing sound information-based conservation policy and decision-making (contrary to Aichi Target 19).

In result, probably all above mentioned themes (where 2010 Aichi Targets have not yet been met), incl. the protection and restoration of ecosystems, habitats and species shall remain the still valid ‘hot issues’ for the future EPRs. Also due to the fact that the 2010 Aichi Targets currently remain binding, unless replaced by new ones set under the CBD.

During the 2020 global Summit on Biodiversity Ms. Ursula von der Leyen, President of the European Commission, mentioned the European Union biodiversity strategy for 2030 that tackles key drivers of biodiversity loss, incl. unsustainable use of land and sea, overexploitation of natural resources, pollution and global warming.

Commitments explicitly inscribed into the 2020 EU biodiversity strategy for 2030 (which has the “ambition to reverse biodiversity loss, lead the world by example and by action”) which are most relevant to EPR Chapter on biodiversity and PAs include:

• Extension of the PA network to cover at least 30 per cent of the land and 30 per cent of the sea in the EU
• Granting the legal strict protection to one third of PAs (10% of EU land and 10% of EU sea), which shall include all the EU's remaining primary and old-growth forests (as the richest forest ecosystems) as well as significant areas of e.g., wetland, peatland and grassland ecosystems
• Effective management of all PAs, defining clear conservation objectives and measures, and monitoring them appropriately
• Increasing the coherency of the Trans-European Nature Network by setting up ecological corridors to prevent genetic isolation, allow for species migration, and maintain and enhance healthy ecosystems
• Bringing back at least 10% of agricultural area under high-diversity landscape features (which shall also help to ensure connectivity among habitats)
• Restoration of terrestrial, freshwater and marine ecosystems (which shall include increasing the quantity, quality and resilience of forests, also by planting at least 3 billion additional trees) under the forecasted EU Nature Restoration Plan
• Enhancing the enforcement of the existing legislation (EU Birds and Habitats Directives, but also e.g., the 2014 EU IAS Regulation), so as to ensure no deterioration in conservation trends and status of all protected habitats and species, and favourable status of at least 30 per cent of currently threatened species and habitats.

According to the EU biodiversity strategy for 2030, the above targets relate to the EU as a whole (hence, including the EU’s outermost regions, such as the overseas countries and territories) and could be broken down according to the EU bio-geographical regions and sea basins or at a more local level. Every Member State will have to do its fair share of the effort based on objective ecological criteria, recognizing that each country has a different quantity and quality of biodiversity.

The above listed commitments and targets of the EU biodiversity strategy for 2030 are indeed ambitious, but probably feasible. For example, the planned extension of the PA network to cover at least 30 per cent of the EU land area (hence, almost twice the threshold indicated in the global CBD Aichi Target 11, concerning 17 per cent of terrestrial and inland water areas) will require an extra 4 per cent of land only, due to the fact that, as of 2019, as much as 26 per cent of the EU's land area has already been protected (18 per cent as part of Natura 2000, which also includes many PAs of national categories, and further 8 per cent solely under national schemes).

Much more challenging would probably be the planned extension of strictly PAs to reach 10 per cent of EU land and 10 per cent of EU sea area, as only 3 per cent of land and less than 1 per cent of marine areas are currently strictly protected in the EU.

Therefore, the 2020 EU biodiversity strategy for 2030 (adopted on 23 October 2020) indicates trends and hot issues in biodiversity management in the coming 2021–2030 decade, which shall duly be taken into account when designing the fourth EPR cycle.

The relevance of targets set in the EU biodiversity strategy for 2030 for the future EPRs results from the fact, that Bulgaria and Romania are the EU Member States, further 4 EPR countries (Albania, Montenegro, North Macedonia, and Serbia) are the EU candidate countries, Bosnia and Herzegovina is a potential EU candidate country, other 3 EPR countries (Georgia, the Republic of Moldova, and Ukraine) are associated with the EU, as many as 7 EPR countries (Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova, Morocco, and Ukraine) are EU partners under the European Neighbourhood Policy, while several other EPR countries benefit from the EU external action and international cooperation support.

In the near future, at the fifteenth meeting of the Conference of the Parties to the CBD (CBD COP15), the post-2020 GBF is to be adopted, perceived a steppingstone towards achieving the 2050 Vision of "Living in harmony with nature", including targets set for the next decade (by 2030).

The Zero Draft of the CBD Post-2020 GBF (dated 6 January 2020, and later upgraded by the related CBD Open-ended Working Group) has five long-term goals for 2050 related to the 2050 Vision for Biodiversity, each of these goals has an associated outcome expected by 2030. The first two goals are most relevant to EPR Chapter on biodiversity and PAs, assuming:

1. no net loss in the area and integrity of freshwater, marine and terrestrial ecosystems by 2030 (and "increases of at least [20%] by 2050" despite that such increases can only be projected in terms of enhanced integrity of these ecosystems, and definitely not concerning the areas encompassed by these ecosystems)
2. the reduction in the percentage of species threatened with extinction by some (not yet defined) per cent until 2030 (paired by an increase in the "abundance of species" by 2030 and 2050, which shall probably be interpreted as the projected increase in populations of species, despite that the Zero Draft does not further elaborate whether the above increase shall be noted for all species, or only the threatened ones).

Furthermore, the draft CBD Post-2020 GBF defines 20 action-oriented targets for 2030, of which the first 6 are considered as important for reducing threats to biodiversity, as follows:

1. **Retain and restore freshwater, marine and terrestrial ecosystems**, increasing by at least [50%] the land and sea area under comprehensive spatial planning addressing land/sea use change, achieving by 2030 a net increase in area, connectivity and integrity and retaining existing intact areas and wilderness.
2. Protect sites of particular importance for biodiversity through PAs and other effective area-based conservation measures, by 2030 covering at least [60%] of such sites and at least [30%] of land and sea areas with at least [10%] under strict protection.

3. Control all pathways for the introduction of IAS, achieving by 2030 a [50%] reduction in the rate of new introductions, and eradicate or control IAS to eliminate or reduce their impacts by 2030 in at least [50%] of priority sites.

4. Reduce by 2030 pollution from excess nutrients, biocides, plastic waste and other sources by at least [50%].

5. Ensure by 2030 that the harvesting, trade and use of wild species, is legal and at sustainable levels.

6. Contribute to climate change mitigation and adaptation and disaster risk reduction through nature-based solutions providing by 2030 [about 30%] of the mitigation effort needed to achieve the goals of the Paris Agreement, complementing stringent emission reductions, and avoiding negative impacts on biodiversity and food security.

Hence, considering the above (possible) targets of the CBD Post-2020 GBF, such could be better reflected in future EPRs by paying more attention to issues related to ecosystem protection and restoration, spatial extension of PAs and their networks, control of IAS populations, and sustainable use of wild species.

However, results of the 3EPRs (mentioned earlier in this section, in the context of non-achievement of Aichi Target 9) as well as VNRs (see also conclusions of the sub-section on SDG Target 15.8) indicate that many EPR countries have not yet even progressed in the identification of IAS, hence a significant progress in the control or eradication of IAS populations cannot probably be expected in the near future (nevertheless, should still be monitored).

The inclusion and due consideration of the ‘other effective area-based conservation measures’ (OECMs) should be emphasized here, as the 3EPR countries were often missing effective tools for species protection outside the existing PAs, while OECMs is a designation (officially endorsed by CBD COP14 in 2018) for geographically defined areas that are achieving the effective in-situ conservation of biodiversity outside of PAs.

On the other hand, what might be missing among the CBD Post-2020 GBF action-oriented targets for 2030 (at least in their current draft version) is the need for setting up ecological corridors and providing functional linkages in the landscape, in order to ensure the ecological continuity and connectivity, which is already adequately covered by the 2020 EU biodiversity strategy for 2030. The conclusions and recommendations of the Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd related to the post-2020 GBF emphasize that “Protecting and restoring ecological linkages between protected and conserved areas is also vital”.

It should be reminded that such ecological linkages should be established both in-country and in transboundary context, which has been emphasized by the United Nations General Assembly resolution A/RES/75/271 “Nature knows no borders: transboundary cooperation – a key factor for biodiversity conservation, restoration and sustainable use”, adopted on 16 April 2021, that “encourages Member States to maintain and enhance connectivity of habitats, including but not limited to those of protected species and those relevant for the provision of ecosystem services, including through increasing the establishment of transboundary protected areas, as appropriate, and ecological corridors (…)”.

Most probably, the above targets as such will be kept in the final version of the CBD Post-2020 GBF (regardless of any future amendments and modifications, concerning e.g., indicators, or particular...
formulations). However, such will only become available as a result of CBD COP15, postponed due to COVID-19 pandemics, and tentatively planned as a physical meeting in Kunming, China for May, and later for October 2021.

On 1 March 2019 the United Nations General Assembly declared 2021–2030 the UN Decade on Ecosystem Restoration, which would therefore focus much more attention of the whole global society and its decision-makers on the protection of natural ecosystems, and measures aimed at their effective restoration in the coming years, than it was the case in the past decades. The above initiative aims to drastically scale up the restoration of degraded and destroyed ecosystems, but by doing so it will largely help to meet the targets of the UN Decade on Biodiversity (2011–2020).

As the ecosystem restoration issues have not yet adequately been covered in the 3EPRs (see conclusions of sub-section 1.1.2), it is highly recommended that, beginning from the fourth EPR cycle (to be launched during the UN Decade on Ecosystem Restoration 2021–2030), all future EPRs perceive the topic of ecosystem restoration as mandatory (see sub-section 4.2.3).

Based on the 3EPR outcomes, it can be noted that in many EPR countries (regardless of whether located in e.g., South Eastern Europe, or Central Asia) the efficient response to climate change and its adverse effects (in particular desertification) could be one of the top priorities in the coming decade/s.

Simultaneously, in the light of ongoing and further escalating climate changes it is possible that the most threatened ecosystems would be those most fragile ones, which survival requires the continuity of specific environmental conditions (e.g., hydrological conditions, temperature) and simultaneously have a comparatively small adaptation capacity, in particular wetland and montane ecosystems (the latter are refuges for numerous species that have narrow habitat tolerance and limited dispersal abilities, thus cannot survive elsewhere). Mr. António Guterres, UN Secretary-General in his message related to the celebration of the International Mountain Day 2020 (on 11 December 2020) stated that “Mountains must move to the centre of our attention – and it is time to move mountains to secure the changes we need to secure the health of our planet and to build a sustainable future for all”.

All globally and regionally adopted strategies shall translate into a number of national strategies and action plans. Adopting such by the states shall be understood only as the indispensable first step, but cannot make a significant change alone, i.e., will not provide adequate response to threats and pressures prior to their effective implementation, preferably including the mechanisms for mid-term evaluation, adjustments and revisions.

Mr. Jerry Brown, the former Governor of California (two terms, in 1975–1983 and 2011–2019) said: “The reason that everybody likes planning is that nobody has to do anything.” Therefore, most important would be the actual effective implementation of ambitious plans, strategies, and other policy instruments, which shall duly be assessed by the future (incl. 4th cycle) EPRs.

We all share a common fate with the other species, despite that most humans travel in the first and business class onboard of the “Global Ecosystem Airlines” (GEA, acronym intentionally similar to Gaea, personification of the Earth, and ancestral mother of all life in Greek mythology, also spelled Gaia), while the vast majority of other animal species and all plant species crowds in a much less convenient economy class. However, should the aircraft be damaged or crush – all GEA passengers will either suffer or die, regardless which class they travelled in.

4.2. Recommendations for the preparation of the fourth Cycle of the ECE EPR Programme

370 Resolution 73/284 https://undocs.org/A/RES/73/284
4.2.1. General recommendations for the preparation of the Fourth Cycle of the ECE EPR Programme

Remarks on the structure of the 3EPR reports, and resulting recommendations for 4EPRs

This assessment was largely based on the contents of the 3EPR chapters related to biodiversity and PAs. However, also the information from the other relevant chapters (e.g., on the implementation of international agreements and commitments, on legal, policy and institutional framework, on environmental monitoring, climate change mitigation and adaptation, forestry, and tourism) was used, especially in cases when the 3EPR reports did not include chapters on biodiversity and PAs (the 3EPRs of Montenegro, and Serbia). For instance, even though such chapter was absent in the two subsequent EPR reports (2EPR and 3EPR) on Serbia, the other chapters provided enough information to roughly assess the progress made by this country (see also 4.2.2. Recommendation for a prospective decision to make the chapter on biodiversity and PAs mandatory in the future EPRs).

It has to be noted, that in some 3EPR reports (e.g., of Bulgaria) the synthetic introductory chapter (“Introduction”) contained data on species or habitats which were surprisingly not available in the most relevant substantive chapter (on biodiversity and PAs). Similarly, the introduction to the 3EPR of Belarus contained detailed information (including two tables) on PAs, which would be more suitable for its chapter on biodiversity and PAs (where such tables were missing). In result, those who were searching for such information in the chapter on biodiversity and PAs would not find it, unless explored the Introduction to the EPR.

However, numbers given in the “Introduction” chapter can sometimes differ from those in the chapter on biodiversity and PAs. For instance, according to the introduction to the 3EPR of Belarus there are 47 game species in the country, while its chapter on biodiversity noted 50 game species (21 mammal and 29 bird species). Such inconsistencies should, for obvious reasons, also be avoided in the future EPR reports.

Taking into account the direct effect of the MEAs in force for the reviewed country on its national legislation (see methodological remarks in sub-section 1.6.1. on legal framework), the positioning of the EPR chapter on the implementation of international agreements and commitments within the EPR contents should probably be reconsidered.

Quite logical, each 3EPR report begins with Chapter 1 on legal, policy and institutional framework (opening Part I on environmental governance and financing). However, despite the obvious interlinkages and above-mentioned influence of MEAs on the legislation, as well as possible MEA requirements for the adoption of resulting policy framework, and the need for adjustment of the institutional structure or even designation of special bodies for the effective implementation of MEAs, in most cases the chapter on the implementation of international agreements and commitments followed much later in the sequence of EPR chapters. In 8 out of 15 3EPRs the chapter on the implementation of international agreements and commitments was opening the relatively short Part II on domestic-international interface (also containing chapter on climate change mitigation and adaptation). Hence, it was usually numbered between 4 and 6, and therefore appeared quite late in the report contents, far from Chapter 1 (which does not allow easy comparisons between the two chapters). In the 3EPRs of Morocco and Uzbekistan the above chapter was kept in Part I, but again numbered 5 or 6. Last, but not least, the 3EPRs of Morocco and Uzbekistan did not have a separate chapter on the implementation of international agreements and commitments, but the related information was available in other chapters, e.g., on air, waste and chemicals, and biodiversity (which usually include such information, regardless of the EPR report structure, which then results in some repetitions and overlaps between chapters). The above issue should probably be further discussed in preparation for the launch of the fourth EPR cycle.

Another important issue to be considered when deciding on the structure of the Fourth Cycle EPRs is the possible inclusion of a separate chapter on forestry. Within the Third Cycle such chapter was present only in 4 out of 15 EPRs reviewed (of Belarus, Bosnia and Herzegovina, Georgia, and Mongolia), while the
3EPRs of Albania, Tajikistan and Uzbekistan covered forestry issues under a separate section of chapter on biodiversity and PAs. Even though forests are only one of the main natural ecosystems (which shall always be covered in EPR chapter on biodiversity and PAs, including the description of forest ecosystems, their species composition etc.) the specifics and the economic importance of the forestry sector (not always relevant for chapter on biodiversity) justifies the need for a thorough consideration of this subject in a separate chapter, also in the light of the ongoing climatic changes.

The above will particularly be important also for the other 3EPR countries where forests (or other ‘forestry fund lands’ understood as areas meant for reforestation and/or afforestation) encompass a significant part of the country’s territory, like e.g., in Montenegro (as much as 69.8 per cent, as of 2013), North Macedonia (38.95, 2017), Bulgaria (37.7 under forest or 43.8 incl. shrubland, 2012), Albania (36, 2015), and Serbia (31 per cent, as of 2011).

Similarly, in EPRs of countries having larger marine economic zones (e.g., Albania, Bulgaria, Georgia, Kazakhstan, and Romania) a separate chapter on marine environments could be considered (such as Chapter 9 on Adriatic Sea Protection in 3EPR Bosnia and Herzegovina).

Furthermore, considering both the growing importance and environmental effects of the tourism industry, adding a separate chapter on tourism and environment (like in the 3EPRs of Belarus and Georgia) can be considered. The tourism industry has been growing fast (until the COVID-19 outbreak) and became one of the global forces for economic growth and development. According to the World Travel & Tourism Council, in 2019 travel and tourism sector’s direct, indirect and induced impact accounted for 10.3 per cent of the global GDP, by contributing US$8.9 trillion to the world’s GDP.\(^{372}\) The UNWTO International Tourism Highlights 2019 Edition\(^{373}\) noted that leisure travel was the main purpose of visit in all world regions (except the Middle East).

Nowadays, it can be anticipated that in the coming years (or decades) human pressures on the ecologically sensitive sites and areas will increase much faster than before the COVID-19 pandemics (see also subsection 4.2.3 on its possible impacts), which would then require much more effective and sustainable management of visitor traffic inside PAs (perceived as particularly attractive tourist destinations, allowing outdoor recreation while respecting the ‘social distancing’ safety precautionary rules) in order to minimize the possible adverse effect of increased tourism pressures on the biological and landscape diversity.

It should also be emphasized that one more important state policy domain remains missing so far under the EPR: physical/spatial planning, which is simultaneously the resultant of and the linking element for the vast majority of sectoral policies covered in EPRs and reflects the general approach of the Government to the complexity of environmental issues and challenges versus the socio-economic development of a country. Country performance in physical/spatial planning for land use and land/sea resources management is directly connected to SDG Targets 2.4, 3.6, 6.3, 6.4, 6.5, 6.6, 7.2, 7.6, 8.9, 9.1, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.a, 11.b, 12.2, 13.1, 13.2, 13.b, 14.1, 14.2, 14.5, 15.1, 15.2, 15.3, 15.4, 15.5, 15.9, and 17.14.

As the conservation status and trends in population of species mostly depend on the state of their habitats within such larger ecosystems, the description of ecosystems could also be positioned as the first introductory sub-section of the whole chapter on biodiversity and PAs, while the sub-sections on species would follow this introductory part. On the other hand, the current sequence of contents, where the assessment of pressures (on species and ecosystems) immediately follows the sub-section on ecosystems largely facilitates the understanding of the intensity and consequences of ongoing changes (which equally affect both the ecosystems and the species occurring there) and can therefore be kept for the fourth EPR cycle (hence, the above change in sequence is only optional).

\(^{372}\) https://wttc.org/Research/Economic-Impact

\(^{373}\) www.e-unwto.org/doi/pdf/10.18111/9789284421152
It is also recommended that the sub-section concerning IAS is shifted from its current position within the biodiversity chapter (from the part on “Trends in species and ecosystems”, which should first and foremost concern the natural ecosystems and their native species composition) to the more relevant section on threats and pressures on species and ecosystems. Furthermore, the sub-section “Use of GMOs” can either be no longer required or merged with the above (on IAS).

Last, but not least, in cases of some 3EPRs substantive overlaps between the EPR chapter related to economic instruments for environmental protection and the financing of environmental expenditures and regulatory measures, and the thematically similar section of the chapter on biodiversity and PAs concerning regulatory, economic, fiscal and information measures should be noted. Although potentially beneficial as mutually-reinforcing, it should always be taken into account that some EPR biodiversity experts might not necessarily be experts on e.g., finance, much more often biologists or foresters, who would then perceive this particular section as “obligatory, but not their personal priority, as not matching their professional skills” [the above does not relate to the author of this assessment, an economist by education].

Remark on the use of SDG indicators in EPRs

The use of some SDG indicators could possibly be re-considered, taking into account the outcomes of sub-section 2.2 of this assessment.

It should be emphasized, that the meaningfulness of the globally adopted SDGs and its resulting Targets (or the CBD Aichi Targets) is not questioned here, but the effective use of some corresponding (also globally adopted) SDG indicators for the main EPR objectives and purposes (i.e., assessing the country performance within the EPR reporting period, indicating possible shortcomings, and assisting the reviewed country by indicating and recommending feasible solutions) can be questionable.

Some of the SDG indicators are always referred to, and their values are duly provided (both in 3EPRs and VNRs of reviewed countries), while some other SDG indicators are never available (neither in 3EPRs, nor VNRs), due to several different sound reasons.

The values of some SDG indicators were never provided in 3EPRs, most often due to the unavailability of sufficient national data necessary to calculate such, especially if the methodology adopted for calculating the value of particular indicator is too complicated and requires sophisticated scientific studies, well beyond the country’s capacity.

Some other globally adopted SDG indicators do not necessarily allow to assess the country performance. Hence, in such cases some 3EPRs strived to describe the country’s progress (or the lack thereof) in a narrative mode, basing on available information or estimates (thus, not using the numbers, often not allowing to explain the reality).

The brief evaluation of the globally adopted SDG indicators (of their coverage in 3EPRs and VNRs, and usefulness for EPR purposes) is as follows:

SDG indicator 2.5.1 (Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities) is often referred to in 3EPRs and VNRs and useful but requires access to data for at least 2 years (preferably for the first and second last year of the EPR reporting period) for comparisons.

SDG indicator 2.5.2 (Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction) is potentially useful, but has never been provided (neither in 3EPRs, nor VNRs), as the extinction risk status for local breeds is rarely assessed by countries (hence, the indicator cannot be calculated).
SDG indicator 6.6.1 (Change in the extent of water-related ecosystems over time) would be very useful (also considering the approaching UN Decade on Ecosystem Restoration 2021–2030), but has never been provided (neither in 3EPRs, nor VNRs), as the adopted methodology is probably too complicated.

SDG indicator 11.4.1 (currently: 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) was never provided for in 3EPRs (which therefore described the progress in the successful nomination of the new ‘natural’ and ‘mixed’ WH properties). Despite that the value of SDG indicator 11.4.1 was provided in 2 VNRs (by Mongolia and the Republic of Moldova), the usefulness of such information (addressing the conservation issues solely from the ‘financial point of view’, while the actual effects of measures financed could not be evaluated, and where expenditures on cultural and natural heritage were jointly reported) for the EPR purposes seems to be disputable.

SDG indicator 14.2.1 (previously: Proportion of national exclusive economic zones managed using ecosystem-based approaches) has never been provided (neither in 3EPRs, nor VNRs), probably due to the lack of national data or the non-precise methodology previously used. This is probably why the wording of this indicator has recently changed (E/CN.3/2020/2, Annex III) to read as “Number of countries using ecosystem-based approaches to managing marine areas” (which therefore requires simple “yes or no” evaluation).

SDG indicator 14.5.1 (Coverage of PAs in relation to marine areas) would be very useful, but has never been provided (neither in 3EPRs, nor VNRs). Therefore, 3EPRs assessed the progress in the narrative mode.

SDG indicator 15.1.1 (Forest area as a proportion of total land area) has duly been provided (both in 3EPRs and VNRs) and is a simple and quite useful tool to assess the country progress.

SDG indicator 15.1.2 (Proportion of important sites for terrestrial and freshwater biodiversity that are covered by PAs, by ecosystem type) would be very useful, but cannot properly be calculated prior to the successful delimitation of sites and areas important for terrestrial and freshwater biodiversity (which requires multidisciplinary scientific research, field nature inventorying works undertaken at the national scale, and effective long-term biodiversity monitoring). The value of SDG indicator 15.1.2 was provided in the 3EPR of North Macedonia, and in VNRs by Mongolia and Morocco.

SDG indicator 15.2.1 (Progress towards sustainable forest management) has never been provided (neither in 3EPRs, nor VNRs), as the national data are often unavailable while the adopted methodology is too complicated (5 sub-indicators, which not yet fully cover all aspects of sustainable forest management).

SDG indicator 15.3.1 (Proportion of land that is degraded over total land area) although quite simple and easily measurable, and potentially useful, was rarely available in 3EPRs (of Mongolia and Romania, plus estimates for Uzbekistan) and VNRs (by Mongolia), probably due to the lack of national data and resulting assessments.

SDG indicator 15.4.1 (Coverage by PAs of important sites for mountain biodiversity) would be very useful, but (similarly as SDG indicator 15.1.2) cannot properly be calculated prior to the successful delimitation of such areas. Hence, the availability of this SDG indicator largely depends on the availability of national data. This is probably why the value of SDG indicator 15.4.1 has rarely been provided (only in the 3EPR of North Macedonia and in the VNR by Kazakhstan).

SDG indicator 15.4.2 (MGCI), although its value was sometimes provided in 3EPRs (of North Macedonia, Romania and Uzbekistan), is too general and too artificial to be of any tangible value for the EPR process (as the data aggregation method does not allow to differentiate between e.g., close canopy high growing stock temperate broadleaf mountain forest and poor mountain grassland or cropland in arid areas).
Similarly, **SDG indicator 15.5.1** (RLI) does not allow to assess the country performance towards the achievement of Target 15.5 unless its value is calculated on the basis of the last two adopted national red books (which are often unavailable in 3EPR countries). The value of SDG indicator 15.5.1 was provided only in the 3EPR of Romania but based on the global scale threat assessment by IUCN (which does not reflect the conservation status of species in a particular country, and cannot consider all locally threatened species, e.g., not the locally endemic species). Only the changes in the value of a ’downscaled’ RLI (based on national red lists) allow to assess how are globally threatened species conserved in a particular country, indicating the effectiveness of measures undertaken (or the lack thereof).

**SDG indicator 15.6.1** (Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits) is by definition an international indicator, not monitored at the national level (requiring simple “yes or no” evaluation). 3EPRs provided descriptive explanations on the above, while none of the VNRs referred to Target 15.6.

**SDG indicators 15.7.1 and 15.c** (Proportion of traded wildlife that was poached or illicitly trafficked) are by definition non-credible, due to the general absence of reliable national data. The values of the above indicators have never been provided (neither in 3EPRs, nor VNRs).

**SDG indicator 15.8.1** (Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species) is again (like SDG indicator 15.6.1) an international indicator, not monitored at the national level. However, its “yes or no” evaluation has to consider two aspects: adoption of national legislation, and adequate resourcing (which is usually described in a narrative manner in 3EPRs, while most VNRs did not referred to Target 15.8, except for Bulgaria).

**SDG indicator 15.9.1** (previously: Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020, in 2020 reformulated to read as: “(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 NBSAP 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”) will probably soon be again reformulated, in order to reflect the outcomes of the CBD COP15. Most 3EPRs briefly assessed the country’s achievement (or in fact the lack thereof, or limited progress), while none of the VNRs referred to Target 15.9.

**SDG indicator 15.a** (previously: Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems, in 2020 reformulated to read as: “15.a.1 (a) Official development assistance on conservation and sustainable use of biodiversity; and (b) revenue generated and finance mobilized from biodiversity-relevant economic instruments”) and **SDG indicator 15.b** (previously: Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems, in 2020 reformulated to read as: “15.b.1 (a) Official development assistance on conservation and sustainable use of biodiversity; and (b) revenue generated and finance mobilized from biodiversity-relevant economic instruments”), always of the same wording, but in the latter case related to sustainable forest management, are very much auxiliary indicators, measuring “in financial terms” the implementation (or the lack thereof) of country’s commitment to conserve and sustainably use biodiversity and ecosystems, and support sustainable forest management. Most often relevant statistical data can be expected from the countries, but quite often it would then be too aggregated to be of any particular value for the EPR purposes.

Simultaneously, another question for further consideration arises – the choice between adding SDG-related boxes or integrating SDGs into the text of particular Chapters (approach first tested in the 2020 3EPR of Romania).
SDG-related boxes are probably more “user-friendly” (by clearly highlighting the position of a country vis-à-vis particular Targets) but can slightly extend each Chapter (by repeating some information already provided in the text). Integration of SDGs into the text of relevant Chapters can save some space but can also result in the absence of adequate explanations related to the SDG Targets.

In the opinion of the author of this assessment, taking into account that the progress towards the achievement of numerous SDG Targets can be best described in the narrative mode, even if the value of particular SDG Indicator can be provided, the textual explanation should always follow.

**Remark on adjusting EPR reports focus to the main objective of the EPR process**

As already emphasized, the main objectives of the EPR process are to assess the country performance within the EPR reporting period, indicate possible shortcomings, and assist the reviewed country by indicating and recommending feasible solutions.

The quality of EPR chapter on biodiversity and PAs always largely depends on the availability of data, while national biodiversity monitoring systems are not yet operational in many EPR countries.

However, more important are the skills of particular EPR expert to interpret available data (or the lack thereof). This is particularly important in the situation when national assessments of trends in ecosystems and their biodiversity and evaluations of the effectiveness of strategies implemented and measures applied in a country are simply not available (which is most often the case), or (even if available) not translated into e.g., English or Russian.

In order to achieve its main objectives, EPR chapter on biodiversity and PAs should preferably focus not only on the assessment of trends, but in particular on the evaluation of the performance and progress made by the country (or the lack thereof).

Therefore, it is recommended that the written “Explanatory note on drafting process” handed to each EPR expert is supplemented by the following instruction:

“Every effort should be made to avoid merely quoting numbers and e.g., Latin names of species or plant communities. Rather, it is important to assess and indicate trends and changes over the EPR reporting period, track the country progress (or the lack thereof), evaluate the effectiveness of tangible ‘country response’ to threats and challenges, indicate and recommend feasible solutions.”

**Remark on the possibilities for the extension of the geographic range of the EPR process**

The success, benefits and influence of the EPRs carried out so far (also beyond ECE, in Morocco and Mongolia) could largely encourage the Governments of many ECE countries to continue EPRs, as well as the Governments of the other countries (in particular developing ones), also on other continents, to get involved in this assessment scheme. Therefore, some enhanced promotion of the EPR benefits and positive influence on the country environmental performance should preferably precede or accompany the launch of the 4th cycle of the EPR process.

**4.2.2. Recommendation for a prospective decision to make the chapter on biodiversity and protected areas mandatory in the future EPRs**

As mentioned, several times in different sections of this assessment, two 3EPR reports (of Montenegro and Serbia) did not contain a separate chapter on biodiversity and PAs. Moreover, it should be noted that such chapter was also absent in their 2EPR reports, and in result biodiversity-related issues in the above two countries have been last assessed under 1EPR of Yugoslavia in 2002 (hence, almost two decades ago).
The above does not mean that biodiversity-related issues were completely absent in the 3EPRs of these two countries. Some information, although scarce, non-exhaustive, and not always credible (e.g., the quite misleading information on forests in both countries) was sometimes available in other EPR Chapters (which allowed at least mentioning these countries in section 1 of this assessment, providing some basic indicative data, and their rough assessment).

The reasons why such thematic gap already became “traditional” for these two countries cannot easily be explained. It cannot be true that biodiversity conservation issues (as well as numerous related SDG Targets) were positioned at the very end of their ‘national lists of priorities on the political agenda’, also due to the fact that Montenegro and Serbia both harbour outstanding biological and landscape diversity, safeguarded in PAs.

On the contrary, the 2019 VNR by Serbia named a strictly protected plant species (Ramonda serbica) as the “symbol of sustainable development of Serbia” (VNR) and declared (VNR), that “It would be hard to single out the most important one among the SDGs related to environmental protection, but for Serbia, it would be the preservation of biodiversity, as an obligation towards the present, and even more towards future generations”.

As for Montenegro, even though not explicitly declared, biological and landscape diversity is of outmost importance for the national economy and sustainable development, according to the CIA “tourism, which accounts for more than 20% of Montenegro’s GDP, brings in three times as many visitors as Montenegro’s total population every year”. Hence, should the qualities of Montenegrin biological and landscape diversity deteriorate (which is actually the case, accordingly to the Fourth CBD NR by Montenegro), the overall tourist attractiveness of the country would decline, and its economy would immediately suffer, as a result of processes not even assessed in EPRs since 2002.

Furthermore, already at the time of their 3EPRs the PA network share in the total country’s territory accounted for 9.05 per cent in Montenegro and 6.05 in Serbia (despite that these values in both countries were still below the threshold set by Aichi Target 11, PAs encompassed considerable parts of their territory, and largely contributed to generating revenues from tourism, both domestic and international).

Last, but not least, it can hardly be explained why separate chapters on biodiversity and PAs were absent in the 3EPRs of both above countries, conducted in the course of the UN Decade on Biodiversity (2011–2020).

In the opinion of the author of this assessment, despite that each EPR is a voluntary exercise (conducted at the request and invitation of the Government of a respective country), Governments requesting an EPR should always consider, and agree upon the review of the full, ‘EPR standard’ set of media, perceived more as a mandatory EPR contents than a “wish or not list” of subjects to choose from, as the current EPR set of media (incl. air, water, waste and chemicals, biodiversity, forestry, land resources) which occur in each country on Earth seems to be vital and indispensable for all countries worldwide, regardless whether reviewed or not.

Otherwise, taking into account the time interval between successive reviews, exclusion of media X from one EPR cycle automatically leads to the discontinuity in the review of country’s performance on this particular subject, sometimes resulting in up to some 20-year long time gap (e.g., between the first and third cycle review) during which the environmental performance in particular thematic area is not monitored and evaluated. In result, even if the performance in particular thematic area is reviewed in e.g., 3EPR, its findings and conclusions would relate solely to the progress (or failures) made throughout the last 10 years preceding the third EPR cycle, while little or no information would be available on their performance.

throughout the first 10 years following 1EPR (cases of e.g., Kazakhstan and Uzbekistan concerning the coverage of biodiversity and PA issues).

Similarly, if biodiversity and PAs remain “traditionally” non-covered under the possible 4EPR of Montenegro and Serbia, the resulting gap in knowledge would then extend to some 30 years.

Moreover, such obvious gaps in thematic coverage in EPRs of one country make e.g., the regional assessments (comparisons of the situation and performance in a larger region, including several neighbouring countries) on particular thematic areas, where the knowledge is ‘fragmented by country’, much less feasible.

In July 2020 the Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd emphasized that “There is a huge implementation and enforcement gap, acknowledged by States, as actions fall short of commitments made through treaties and legislation”, that “Courts in all regions of the world have determined that the failure of States to take adequate action to protect healthy ecosystems and biodiversity can violate the right to a healthy environment”, and that “A critical factor in the global nature crisis is that States and businesses have repeatedly failed to fulfil their commitments and have not been held accountable because of the weak enforcement mechanisms in international environmental law”, and concluded that “Environmental laws and regulations must not be weakened, nor enforcement relaxed”.

Due to the above, it is highly recommended that, beginning from the fourth EPR cycle, all future EPRs perceive biodiversity and PAs as mandatory component of their EPRs (also due to the fact that the fourth EPR cycle shall be launched during the UN Decade on Ecosystem Restoration 2021–2030, see also the next sub-section).

4.2.3. Recommendation for a prospective decision to make the topic of ecosystem restoration mandatory in the future EPRs (in the light of the approaching UN Decade on Ecosystem Restoration 2021–2030)

As already mentioned in the sub-section (4.1.) on the foreseen trends and hot issues in biodiversity management for the next decade, the efforts undertaken worldwide in the past, aimed at halting the biodiversity loss, or mitigating negative trends have not yet been successful.

Moreover, it turned obvious, that the previous initiatives focused e.g. on preventing the loss of threatened species could not be successful in the light of the ongoing and still increasing deterioration of all main natural ecosystems (on which services the survival of humans as species is largely dependent), further exacerbated by the ongoing global climate changes.

This is exactly why, alerted by the current situation, on 1 March 2019, the UN General Assembly adopted the resolution proclaiming 2021–2030 the UN Decade of Ecosystem Restoration, with the aim of supporting and scaling up efforts to prevent, halt and reverse the degradation of ecosystems worldwide and raise awareness of the importance of successful ecosystem restoration.

In order not to ‘reinvent the wheel’ for justifying the sound reasons of the above declaration, by comparing the potential environmental and economic benefits with the required investments, estimating unavoidable losses in case the ‘business as usual’ scenario prevails, or explaining the concept of ecosystem restoration, it is probably enough to quote (copy-paste) below just a few statements from the two relevant UN websites, as follows:

376 [UN GA Resolution 73/284](https://undocs.org/A/RES/73/284)
“The degradation of land and marine ecosystems undermines the well-being of 3.2 billion people and costs about 10 per cent of the annual global gross product in loss of species and ecosystems services. Key ecosystems that deliver numerous services essential to food and agriculture, including supply of freshwater, protection against hazards and provision of habitat for species such as fish and pollinators, are declining rapidly.”

“Restoring ecosystems large and small protects and improves the livelihoods of people who depend on them. It also helps to regulate disease and reduce the risk of natural disasters. In fact, restoration can help us achieve all of the Sustainable Development Goals.”

“Ecosystem restoration means assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact. Healthier ecosystems, with richer biodiversity, yield greater benefits such as more fertile soils, bigger yields of timber and fish, and larger stores of greenhouse gases.”

“Between now and 2030, the restoration of 350 million hectares of degraded terrestrial and aquatic ecosystems could generate US$9 trillion in ecosystem services. Restoration could also remove 13 to 26 gigatons of greenhouse gases from the atmosphere. The economic benefits of such interventions exceed ten times the cost of investment, whereas inaction is at least three times more costly than ecosystem restoration.”

“Ecosystem restoration is fundamental to achieving the Sustainable Development Goals, mainly those on climate change, poverty eradication, food security, water and biodiversity conservation. It is also a pillar of international environmental conventions, such as the Ramsar Convention on wetlands and the Rio Conventions on biodiversity, desertification and climate change.”

“Ecosystem restoration is defined as a process of reversing the degradation of ecosystems, such as landscapes, lakes and oceans to regain their ecological functionality; in other words, to improve the productivity and capacity of ecosystems to meet the needs of society. This can be done by allowing the natural regeneration of overexploited ecosystems, for example, or by planting trees and other plants.”

“Restoration can happen in many ways – for example through actively planting or by removing pressures so that nature can recover on its own.”

In the light of the above, it is highly recommended that beginning from the fourth EPR cycle, to be launched during the UN Decade on Ecosystem Restoration 2021–2030, all future EPRs perceive the topic of ecosystem restoration (most relevant to EPR chapter on biodiversity and PAs) as mandatory.

4.2.4. Reflection on the impact of COVID-19

Four different aspects of the possible impact of COVID-19 pandemics should be briefly analysed here:

- the possible indirect impact of COVID-19 on attitudes and policies related to sustainable development
- the direct impact of COVID-19 on the state of environment
- the direct impact of COVID-19 on biodiversity and PAs
- the direct impact of COVID-19 on the EPR process.

The indirect impact of COVID-19 on attitudes and policies related to sustainable development seems to be quite promising. The above can probably be confirmed by quoting several speakers of the recent 2020 global Summit on Biodiversity (mentioned in section 4.1.).

Mr. António Guterres, UN Secretary-General, said that nature-based solutions must be embedded in COVID-19 recovery and wider development plans, given how the preservation of biodiversity can create jobs and economic growth while also tackling the climate crisis. Ms. Elizabeth Maruma Mrema, CBD
Executive Secretary said that the coronavirus offers a rude awakening that if “we push nature into a corner”, there can be zoonotic disease response, and that the money pumped into global economies must come with “green strings attached”, as that will allow for resetting the development path. Mr. Xi Jinping, President of China, said that the acceleration of global extinction of species, loss of biodiversity and degradation of the ecosystem pose a major risk to human survival and development. Ms. Audrey Azoulay, UNESCO Director-General, said that human activities are responsible for 75 per cent of the Earth’s alterations, but crises like the COVID-19 pandemic present opportunities to change direction.

In closing remarks Ms. Amina Mohammed, UN Deputy Secretary-General stated that COVID-19 is an opportunity to transform humanity’s relationship with the environment, while Mr. Volkan Bozkir, President of the General Assembly, said that despite the severe hardships that it has caused, the COVID-19 pandemic is a unique opportunity for a green reset that will require mobilizing public and private financing to embrace nature-based solutions and disaster risk reduction.

To summarize, it seems that the COVID-19 pandemic was perceived at the Summit as a wake-up call to the world to halt an alarming decline in biological diversity and consider rebuilding the relationship between people and nature.

The direct impact of COVID-19 on the state of environment will most probably have fluctuating trend, and different effects in each of the two sequent phases likely to repeat in the coming years, i.e., the ‘economic lockdown’ phase due to restrictions imposed by governments in response to increasing pandemic “waves”, and the ‘economic resumption’ phase, commencing with the immediate re-opening of businesses upon the alleviation of the pandemic-related restrictions.

The environmentally positive effects of the first economic lockdown phase (summer 2020) included, e.g., the decline in the level of air pollution, as a result of decreased industrial production and limited passenger and freight traffic on land, water and in the air. Furthermore, the economic shutdown drastically (but only temporarily) decreased the demand for some natural resources, excessively extracted in the past. Such rapid changes were lethal to economy and human welfare, but quite beneficial for e.g., natural ecosystems, allowing their natural regeneration in the times of the so-called “anthropopause” (phenomenon resulting from the break in human activity, including largely reduced human mobility during the quarantine, unparalleled in recent history). For example, people locked in their cities and homes in late spring 2020 could notice the improving health status of trees growing inside cities, which suffered less from the air pollution, urban traffic noise, light pollution etc.

However, each “pause” is by definition only a transient one, so that pollution of the environment and pressure on resource extraction can rapidly increase with each ‘economic resumption’ phase, and reach the pre-pandemic scale, should the ‘green reset’ never be initiated and consequently enforced.

The direct impact of COVID-19 on biodiversity and PAs can probably have mainly adverse effects. The anecdotal observations of wild species entering urban areas and wildlife encounters within human settlements during lockdown times might sound as ‘positive messages’ but results from the naive perception of interactions between wildlife and humans. Such incidental happenings do not mean that nature can effectively reconquer its former habitats, heavily transformed and used by humans. On the contrary, such occasional migrations of wildlife into towns can only result in further synanthropisation of several wild species and make them even more reliant on e.g., remains of discarded food (which was a serious problem already well before the pandemics, e.g., in 2002 the author of this assessment observed a dozen of brown bears feeding on garbage in the outskirts of a city of almost 300 thousand human inhabitants, in one of the 3EPR countries).

Furthermore, the application of the ‘social distancing’ precautionary principle to humans (one of the most invasive species on Earth) has already resulted in growing visitation pressures not only on the easily accessible green spaces located in or near the metropolitan areas, but in particular on PAs (thus, the most ecologically sensitive sites and areas), regardless their location and distance to the nearest cities. The first
spring 2020 lockdown period temporarily reduced people’s mobility and range of outdoor activities (allowing the nature to regenerate after the winter period under unprecedentedly low human pressures), but soon after the demand for nature-based tourism rapidly increased. Already in summer 2020 (the first longer holiday season during the COVID-19 pandemics) millions of people decided to avoid previously bustling and most visited main holiday resorts and destinations, instead crowded in e.g., national parks (complete statistical data for 2020 are not yet available, but the above phenomenon has been observed and monitored by the author of this assessment). It should be noted that in numerous countries COVID-19 related restrictions were (and still are) much less severe for open areas (incl. forests and parks) where the ‘social distancing’ rule could easily be obeyed. The above additionally amplified the recent trends in tourism, where the outdoor tourism and recreation already became the new mainstream, as in the last years still more and more people were seeking recreational opportunities in natural areas.

It can be anticipated, that in the coming years (or decades) most people would be discouraged and reluctant to travel abroad (e.g., to the other continents, in particular to regions with inadequate hygienic standards and underdeveloped public health care systems), while the popular ‘city breaks’ tourism pattern would still remain far less attractive than in the past (due to temporary closures or imposed limits, e.g., on the allowed maximum number of visitors to museums and other tourist attractions). In result, a considerable part of tourists would probably choose spending their leisure time in their home countries, preferably in less crowded places, in particular the natural open areas (including PAs), which will further increase the pressures (e.g., the disturbance of resident wildlife species).

Other possible negative COVID-19 related effects for biodiversity could include the worsened human attitudes towards the protection of several faunal species (e.g., bats, which for natural reasons carry many other viruses than just the coronavirus), the still possible transmission of the coronavirus (e.g., its future mutations) among other species (with possible adverse, incl. lethal effects), or the increased poaching pressure in more remotely located areas due to economic hardship in low-income countries paired by the reduced presence of e.g., wildlife rangers.

Moreover, in several countries the still limited funding for biodiversity conservation measures and PA management could become even less available than before the pandemics, due to the other competing political priorities, requiring urgent state budget expenditures on e.g., the improvement of national healthcare system and state support for the economic recovery after the pandemic, or surviving the possible post-pandemic recession. The above could further decrease the PA operational capacities in terms of human resources (by affecting staff salaries) and equipment, as well as the effectiveness of law enforcement inside PAs.

It should also be noted that COVID-19 pandemic seriously delayed the process of finalization of the CBD Post-2020 GBF, expected to be adopted at CBD COP15, initially planned for 2020, then re-scheduled several times (currently postponed until October 2021).

A year after the COVID-19 pandemic outbreak, a special issue of PARKS has been published by IUCN’s World Commission on Protected Areas, solely devoted to the impact and implications of COVID-19 on the world’s protected and conserved areas (PCAs), and on the people and livelihoods dependent on them. This publication includes the summaries of the results of the ten independent surveys on the impacts of COVID-19 on PCAs, carried out in different regions, analyses the effects of the pandemic on urban parks and PAs and marine PCAs, on changed tourism pattern and load in PCAs, on ranger service operations and increased intensity of illegal practices in PAs, on the impact (positive or negative) of the pandemic on conservation policies and practice, incl. PCAs, and on funding for PCAs.

The direct impact of COVID-19 on the EPR process can also be mainly negative, especially if the pandemics continues for years, and prevents the organization of country review missions, which in the past

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378 Parks Journal 27 (Special Issue on COVID-19), March 2021, IUCN. https://parksjournal.com/parks-27-si-march-2021/
years always included physical meetings and in-person interviews, as well as field visits. Such direct interactions and observations always allowed for the verification of data and information provided via official channels by the governments, but also for more informal consultations with numerous stakeholders (e.g., NGOs) and relevant persons interviewed on the spot.

Regardless that EPRs can probably be also effectively conducted in a ‘safe remote mode’, if the format and conduct of meetings is amended by replacing physical meetings by the use of electronic communication means (in particular online meetings), the quality and credibility of such ‘remotely conducted’ EPRs can significantly be lower.

Information acquired solely during such online meetings (often recorded, of which the participants might be aware, and therefore reluctant to elaborate more on the potentially controversial issues), e.g., group meetings with country officials (which in some 3EPR cases meant only listening to their excessive lip service, and brought limited outcomes) can hardly substitute the information acquired (sometimes during an informal interview) straight from the source, collected and verified during visits to research institutes, facilities and laboratories, and interviews with scientists, researchers (but also park managers and rangers) held in their working environment (which largely facilitates access to the not yet digitalized documents, available only there, in hardcopy / paper format, usually non-available during ‘official meetings’), observations made on the ground, and hands-on-experience available during field visits.

Most probably, the only possible “positive effect” of COVID-19 on the EPR process could be the amount of budget saved on non-organized and non-conducted preparatory and review missions to EPR countries (however, with all negative consequences of such change, mentioned above, that cannot be compensated by budgetary savings).