Co-operation for the Convention on Biological Diversity

Report on lessons learned for designing and implementing national indicator frameworks

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1. List of Abbreviations

AHTEG	Ad Hoc Technical Expert Group on Indicators
BDS	Biodiversity Strategy
BIP	Biodiversity Indicators Partnership
CBD	Convention on Biological Diversity
COP	Conference of the Parties
DPSIR	Driving forces, Pressure, State, Impact, Response (DPSIR) framework
EC	European Commission
EU	European Union
GBO	Global Biodiversity Outlook
KCBD	Knowledge Centre for Biodiversity
KMGBF	Kunming-Montreal Global Biodiversity Framework
NBSAPs	National biodiversity strategies and action plans
OECD	Organisation for Economic Co-operation and Development
ORT	Online Reporting Tool
PSR	Pressure-State-Response indicator framework
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SEBI	Streamlining European Biodiversity Indicators
SPRB	State-Pressure-Response-Benefit

2. Executive Summary

This report aims to support the European Union, its Member States and Horizon Europe associated countries[1] with adopting and adapting the monitoring framework for the Kunming–Montreal Global Biodiversity Framework (KMGBF) at regional and national scales. It identifies best practices for establishing and implementing national biodiversity indicator frameworks based on three sources. Information was sourced from the sixth national reports submitted to the Convention on Biological Diversity (CBD), which provide a review of progress in the implementation of the Strategic Plan for Biodiversity 2011-2020. Secondly, information from national monitoring, reviewing and assessment plans found in National Biodiversity Strategies and Action Plans (NBSAPs) aligned with the KMGBF was utilized. Lastly, interviews were conducted with national experts involved in developing and maintaining national biodiversity indicator frameworks to monitor progress towards the implementation of NBSAPs aligned with the KMGBF.

Analysis of CBD Sixth National Reports conducted for this publication found that the number of indicators used by the European Union, its Member States and associated countries to monitor progress towards national targets varied. Most of the assessed Parties reported using at least one indicator to track progress towards one of their national targets. Very few Parties provided information regarding the indicator's methodology, baseline, and definition. While monitoring systems were in place, expert opinion was heavily relied upon for assessing progress in the sixth national reports.

At the time of the interviews, very few Parties had submitted an updated NBSAP aligned with the KMGBF. Revising NBSAPs requires extensive consultation, considerable financial resources, and multiple political approval processes. Consequently, updating NBSAPs is a time-consuming and complex process. Interviewed experts noted that the process of identifying indicators and developing an indicator framework would be easier once the national targets were adopted.

[1] List of countries associated to Horizon Europe listed under the CO-OOP4CBD grant agreement Albania, Armenia, Bosnia and Herzegovina , Faroe Islands*, Georgia, Iceland , Israel, Kosovo** ,Liechtenstein, Moldova, Montenegro, North Macedonia, Norway, Serbia, Switzerland , Tunisia, Turkey, Ukraine, United Kingdom

(*) The Faroe Islands is a self-governing overseas administrative division of the Kingdom of Denmark.

(**) This designation is without prejudice to positions on status and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

The interviews also explored whether and how biodiversity indicators and monitoring approaches were being adjusted to meet the requirements of the KMGBF.

Experts from nine countries participated in semi-structured interviews. The interviews centered on the use of indicators to monitor and report progress towards NBSAP implementation. The interviews first explored prior approaches to developing and using indicators to monitor and report progress towards the objectives of the CBD. The interviews then explored how indicators were being aligned to meet the requirements of the KMGBF. Finally, based on their experiences developing and using indicators, the interviewees identified best practices that could support other countries strengthening national biodiversity indicator frameworks.

The first theme to emerge from the interviews revolves around broad multi-stakeholder engagement. National monitoring plans are strengthened when developed through participatory processes that are coordinated across several ministries and involve stakeholders from different sectors. Drawing on a wide range of stakeholder helps ensure that the indicators used in national monitoring systems are tailored to the socioeconomic context that they are intended to influence. It builds support and ownership of the indicator(s). Stakeholder involvement is also vital for securing the sustainability of monitoring arrangements (e.g. long-term financing, institutionalization).

A second key theme is the importance of establishing clear governance structures around the development and use of indicators. Organizing workshops to discuss and establish national monitoring plans enables stakeholders to review the monitoring framework, map existing indicators against national targets, identify gaps and develop inventories of existing national monitoring efforts and datasets to address them. It is important to ensure that methodologies used to collect data and calculate indicators are transparent and clearly recorded**,** so valid comparisons can be made between different points in time. Drawing on indicators that are already in use under other frameworks reduces duplication of effort, ensures coherence across policy areas and makes data collection more efficient.

The third theme emerging from the interviews highlights the importance of securing stable financing and staffing for monitoring systems and for maintaining effective indicator production. Developing a comprehensive overview of the biodiversity monitoring landscape can help identify how existing funding streams can be better integrated to facilitate a national monitoring approach that reflects policy and scientific needs.

Finally, experts highlighted the need for broader peer-to-peer learning between countries. These interactions can foster extensive knowledge exchange between scientific communities,

agencies and sectoral stakeholders in developing and maintaining national biodiversity indicator frameworks.

Overall, the findings of this report highlight the importance of early planning and broad multi-stakeholder engagement. They also emphasize the need for flexible and inclusive governance structures, opportunities for knowledge exchange, and long-term financing to support effective national biodiversity monitoring aligned with the KMGBF.

3. Introduction and Background about the CO-OP4CBD Project

This document aims to support the European Union (EU), its Member States, and countries associated to Horizon Europe[1] with adopting and adapting the monitoring framework for the Kunming-Montreal Global Biodiversity Framework (KMGBF) at regional and national scales. It highlights best practice for establishing and implementing national biodiversity indicator frameworks, including potential institutional arrangements that can facilitate technical and scientific cooperation.

The CO-OP4CBD project seeks to enhance coordination and strengthen the implementation of the Convention on Biological Diversity (CBD). To achieve this, CO-OP4CBD undertakes concerted efforts consisting of a set of targeted and coordination and support actions. These include building on existing networks of experts and institutions, engaging experts in CBD processes, supporting the implementation of monitoring, reporting and review mechanisms, and increasing technical and scientific cooperation. By bringing these actions together, this project aims to make more effective use of existing expertise and initiatives and to improve coherence in how the EU, its Member States, and Horizon Europe associated countries draw on available expertise. This in turn will lead to improved advice and support for CBD implementation at national and regional scales, ensuring a more coordinated and effective approach towards biodiversity policies.

Tasks under Work Package 3 (Supporting monitoring, reporting and review) are a response to the capacity needs reported by the EU, its Member States, Horizon Europe associated countries and the evolving discussions taking place more widely among Parties to the CBD.

This report draws upon the experiences of in-country experts who have supported the development and establishment of national biodiversity indicator frameworks. It also reveals their history of using indicators for monitoring National Biodiversity Strategies and Action Plans (NBSAPs) and shows how existing indicators and monitoring approaches are being adjusted/updated to meet the requirements of the KMGBF. The report also identifies lessons

learned and best practices that may support other countries with developing or strengthening national biodiversity indicator frameworks.

4. Policy Background:

The need for monitoring biodiversity trends has been recognized in the text of the CBD, as well as in many decisions taken by its Conference of the Parties (COP). Through Article 7 of the Convention, Parties to the CBD are expected to monitor components of biodiversity that are important for its conservation and sustainable use. These components range from the species level all the way to the level of ecosystems.[2] Although monitoring all components of biodiversity within national jurisdictions is not achievable, Annex I of the Convention text provides indicative guidelines for the components that ought to be considered.

With resources being limited, indicators play a vital part in allowing for the effective and efficient monitoring of biodiversity. Indicators are also essential for Parties to be able to report on the effectiveness of measures that are being taken in meeting the objectives of the Convention as required by Article 26 which states that each Party to the Convention will produce national reports at intervals determined by the COP.[3] National reports should detail measures taken to implement the provisions of the Convention and their effectiveness in meeting the Convention's objectives. National reports provide the COP with the information necessary to assess implementation, identify progress and spot obstacles. By doing this, the national reports identify priorities for future action. Furthermore, the process of submitting detailed national reports enables the COP and other relevant actors (e.g. intergovernmental agencies, non-governmental organizations and scientific bodies) to provide timely and targeted guidance to Parties.

Kunming-Montreal Global Biodiversity Framework

At COP15 in 2022, Parties to the Convention adopted the Kunming-Montreal Global Biodiversity Framework (KMGBF).[4] The KMGBF builds on the Convention's previous Strategic Plans (see Annex I) and sets out an ambitious pathway to reach the global vision

[2] United Nations. (1992). Convention on Biological Diversity. Article 7. Available at: https://www.cbd.int/convention/articles/default.shtml?a=cbd-07

[3] United Nations. (1992). Convention on Biological Diversity. Article 26. Available at; https://www.cbd.int/convention/articles/default.shtml?a=cbd-26

[4] Kunming-Montreal Global Biodiversity Framework (CBD/COP/DEC/15/4)

of a world living in harmony with nature by 2050. Among the KMGBF's key elements are four long-term goals for 2050 and 23 action-oriented targets for 2030 to guide urgent action across the scope of the CBD.

The KMGBF is accompanied by a detailed monitoring framework for tracking progress towards its Goals and Targets.[5] The monitoring framework is comprised of the following group of indicators: headline, binary, component, complementary and national indicators.

The structure and wording of the monitoring framework and its list of selected indicators, as adopted, were in a mixed state of readiness. To facilitate the operationalization of the monitoring framework the COP established an Ad Hoc Technical Expert Group (AHTEG) on indicators.[6] The AHTEG's mandate was to provide overall guidance on the monitoring framework. In particular, the group provides technical advice on the methodologies for indicators, provides guidance on the use of indicators in national planning and reporting, provides guidance on ways to fill temporal and spatial data gaps. It also provides advice on the existing capacity, gaps and needs as they relate to the monitoring framework. The summary report and recommendations of the AHTEG were reviewed by SBSTTA 26.[7] The technical updates to the monitoring framework were adopted by Parties at the sixteenth meeting of the COP in 2024.[8] The monitoring framework includes 27 headline indicators for all four goals and 16 of the 23 targets. Binary indicators for 14 of the 23 targets (including for all targets not covered by a headline indicator), 55 component indicators and 122 complementary indicators.

The COP also adopted an enhanced multidimensional approach to planning, monitoring, reporting and review which links with the monitoring framework for the KMGBF.[9] In line with this decision headline and binary indicators were included in the template for the seventh national report and eighth national reports, due 28 February 2026, and 30 June 2029 respectively. The indicators reported in national reports submitted by Parties will serve as

[5] Monitoring framework for the Kunming-Montreal Global Biodiversity Framework (CBD/COP/DEC/15/5)

[6] 15/6. Mechanisms for planning, monitoring, reporting and review (CBD/COP/DEC/15/6)

[7] Monitoring framework for the Kunming-Montreal Global Biodiversity Framework (CBD/SBSSTA/26/2)

[8] Monitoring framework for the Kunming-Montreal Global Biodiversity Framework (CBD/COP/DEC/16/31)

[9] Mechanisms for planning, monitoring, reporting and review (CBD/COP/DEC/15/6)

the basis for global analysis and informing the COP when it reviews progress towards the implementation of the Framework.

5. Scientific Background

This section provides a brief overview of some of the scientific and technical issues associated with developing and using national and regional biodiversity indicators.

What is an indicator?

From a policy-making viewpoint, indicators are often considered to be quantitative measures that "imply a metric against which some aspects of public policy performance can be measured".[10] As such, they differ from statistics (raw data) because they present information in a context that gives them meaning for a broad audience and not just for technical experts.

An indicator, as defined by the Biodiversity Indicator Partnership (BIP), is "*a measure based on verifiable data that conveys information about more than itself.*"[11] The general term 'biodiversity indicators' as used by the CBD covers more than direct measures of the state of biodiversity itself, such as species populations and extent of ecosystems. It also covers actions to ensure biodiversity conservation and sustainable use, such as the creation of protected areas and regulation of the harvesting of species, and pressures or threats to biodiversity such as pollution, alongside various enabling elements such as participation, resource mobilization and capacity, and benefits from biodiversity to people.

More recently, the AHTEG on indicators, has defined indicators as "*information tools which summarize data on varied and complex environmental and socioeconomic issues to indicate overall status and trends. They can be used to assess progress towards desired objectives at various scales and to signal key issues to be addressed through policy interventions and other actions. Indicators are, therefore, important for monitoring the status and trends of biological diversity and, in turn, feeding back information on ways to continually improve the effectiveness of biodiversity management programmes. Biodiversity indicators, when used to*

[10] Indicators for assessing the effectiveness of measures taken under the convention (UNEP/CBD/SBSTTA/2/4)

[11] Biodiversity Indicators Partnership. (2011) Guidance for national biodiversity indicator development and use. Cambridge, UK: UNEP-WCMC. 40pp. Available here

assess national or global trends, also build a bridge between the fields of policymaking and science." [12]

What makes a successful indicator?

Participants in the 2010 BIP capacity building workshops identified that a successful indicator should be:[13]

i. Scientifically valid.
   - there is an accepted theory that change in the indicator does indicate change in the issue of concern.
   - the data used are reliable and verifiable.

ii. Based on available data – so that the indicator can be produced over time.

iii. Responsive to change in the issue of interest.

iv. Easily understandable.
   - conceptually, how the measure relates to the purpose.
   - in its presentation.
   - the interpretation of the data.

v. Relevant to user's needs.

vi. Used for measuring progress, early-warning of problems, understanding an issue, reporting and awareness-raising, etc.

[12] Guidance on using the indicators of the monitoring framework of the Kunming-Montreal Global Biodiversity Framework** (UNEP/CBD/SBSSTA/26/INF/14)

[13] Brooks, S. and Bubb, P. (2014) Key Knowledge for Successful Biodiversity Indicators UNEP-WCMC, Cambridge, UK 12pp. Available here

What is an indicator framework?

Various indicator frameworks have been developed to categorize indicators.

Pressure-State-Response (PSR) framework

The PSR framework developed by the Organisation for Economic Co-operation and Development (OECD) is a widely applied method of categorizing indicator information for decision-makers.[14] It relates pressures on the environment to the state of the resource or system in question, the impact these pressures have on the resource and/or system, the management responses to these impacts and the policy responses to these impacts.

State-Pressure-Response-Benefit (SPRB) framework

The SPRB framework was adapted from the PSR framework and was adopted by the CBD to guide indicator development.[15, 16] This framework links changes in the state or condition of biodiversity with the pressures resulting from human activities. Society then attempts to reduce or mitigate these pressures by implementing environmental and economic policies that are intended to recover the state of the natural resource. In turn, these responses should improve the benefits that humans derive from the environment.

Driving forces, Pressure, State, Impact, Response (DPSIR) framework

For its reporting activities, the European Environment Agency uses the DPSIR framework.[17] This extension of the PSR framework starts with the underlying social, economic and demographic developments that influence human activities (driving forces). Like the other indicator frameworks, the pressure on environment resulting from these human activities changes the state of the environment. Under this framework, the changes towards the state of the environment lead to impacts on human health, ecosystems and materials. These impacts may elicit a societal response that feeds back on the driving forces.

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[14] OECD. (1994). Environmental indicators. OECD core sets. Organisation for Economic Cooperation and Development, Paris. Available here

[15] Sparks TH, et al. (2011) Linked indicator sets for addressing biodiversity loss. Oryx 45, 411–419. DOI: https://doi.org/10.1017/S003060531100024X

[16] Indicator framework for the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (UNEP/CBD/SBSSTA/REC/XV/1)

[17] EEA 1999. Technical report 25 Environmental indicators: Typology and overview. Available here

What is a national monitoring system?

A national monitoring system is a nationally-mandated system designed to produce data, indicators and reports that measure and monitor implementation of NBSAPs, and thereby also to monitor national contributions to implementation of the KMGBF.[18] The scope and organization of a national monitoring system will be determined by each Party to the CBD, according to what is most appropriate for its needs and circumstances.

6. Source of information for the analysis in this report

6.i Sixth national reports

The sixth national reports provided a review of progress in the implementation of the Strategic Plan for Biodiversity 2011-2020 and towards the Aichi Biodiversity Targets. This included relevant national targets that were based on information concerning the implementation of national biodiversity strategies, national biodiversity action plans and other actions taken to implement the Convention.

Data analysis

Parties could submit their sixth national reports to the CBD through the voluntary online reporting tool (ORT). [19] Sixth national reports submitted via the ORT were made available through the Clearing-House Mechanism and presented in a unified format.[20] For the EU, its Member States and Horizon Europe associated countries that submitted a sixth national report via the online reporting tool (n=31), information was extracted from section III (see table 1).[21] The full list of national reports included in the analysis can be found in Annex III.

[18] UNEP-WCMC (2024) Guidance for developing plans for national monitoring systems in support of the Kunming-Montreal Global Biodiversity Framework. 26pp. Cambridge, UK. Available here

[19] National Reporting (CBD/COP/DEC/XIII/27)

[20] CBD Clearing House Mechanism Available here

[21] Resource manual for the sixth national report, including annotated reporting templates (UNEP/CBD/COP/13/21)

Table 1. Specific fields in Section III of the sixth national report from which data was extracted

Indicators used in this assessment	
Please provide a list of indicators used for the assessment of this target.**OR** If your country has not used, indicators to assess progress towards this national target, please tick this box: No indicator used	
Level of confidence of the above assessment	
Based on comprehensive evidence	Sufficient, robust and readily available information, including indicators, exists to allow for all elements of the target to be assessed.
Based on partial evidence	Some information and some indicators exist for assessing progress towards the target but that not all elements can be assessed or that information limitations exist.
Based on limited evidence	There is limited information and indicators to assess progress towards the target. The assessment draws heavily on expert opinion.
Adequacy of monitoring information to support assessment	
Monitoring related to this target is adequate	The monitoring systems that are in place are able to provide sufficient information, in terms of quality, quantity and timeliness, to assess progress towards the target.
Monitoring related to this target is partial	The monitoring systems that are in place only provide a portion of the information required to assess progress towards this target.
No monitoring system in place	There is currently no monitoring system in place in the country that can be used to assess progress towards this target.
Monitoring is not needed	No monitoring system is required to make timely and adequate assessments of progress towards this target.

A variety of approaches were used by countries to assess national progress towards the implementation of targets aligned to the CBD (see table 2).[22] For Parties that provided a list of indicators, summary statistics (mean, median, minimum and maximum) were calculated to compare their usage in assessing progress towards national targets. The level of confidence and adequacy of monitoring information to assess national progress, as reported by Parties, was also examined.

[22] Global indicators and sub-global approaches to monitor progress in the implementation of the strategic plan for biodiversity 2010-2020. (UNEP/CBD/ID/AHTEG/2015/1/2/Rev.1)

Table 2: General approaches to monitoring

Approach	Description
Quantitative indicators	Measures or metrics based on verifiable data that provide scientifically robust and objective evidence.
Expert opinion	*Expert advice* - convening relevant experts to offer their opinion and use their expert judgement to assess progress towards the Aichi Biodiversity Targets.
	Author opinion - the author(s) of the national report gather primary evidence on the status and trends of biodiversity, synthesize knowledge, generate information and draw overall conclusions on progress.
Stakeholder consultation	*Stakeholder input* - stakeholders with an interest in the national report and biodiversity generally are directly solicited to provide relevant information and input. Stakeholder contributions may be gathered through consultations, interviews, face-to-face or online workshops or stakeholder review of documents
	Public and community consultations - the general public may be consulted as a whole, or specific communities may be identified for targeted consultation. Such consultations may take place through individual interviews, questionnaires, online reviews, workshops or awareness-raising events.
Case studies	For some complex subjects, obtaining a clear picture of the status of biodiversity, the reasons for any change or the impact of any measures taken may be difficult due to a range of confounding factors. Case studies can be used to provide a detailed analysis and to demonstrate progress at a local level towards a national or global target.

6.ii National Biodiversity Strategies and Action Plans

National Biodiversity Strategies and Action Plans (NBSAPs) are the principal planning instruments for implementing the CBD at the national level. Following the adoption of the KMGBF, Parties were requested to revise or update their NBSAPs such that they were aligned with the KMGBF and its goals and targets.[23] The revision or update of NBSAPs is expected to involve and facilitate the engagement of all government sectors at all levels of government, and all stakeholders including Indigenous Peoples and local communities, women and youth across society.

[23] 15/6. Mechanisms for planning, monitoring, reporting and review (CBD/COP/DEC/15/6)

In order to ensure the utility of NBSAPs in enhanced implementation, monitoring and reporting they should contain the following common elements:

i. National targets addressing or contributing towards each of the goals and targets of the KMGBF.
ii. Concrete actions, policies and programmes designed to meet the national targets and to contribute to the global goals and targets.
iii. National monitoring, reviewing and assessment plans. Headline and binary indicators should be used to track contributions towards the goals and targets of the KMGBF. Component, complementary and other national indicators should be used too when relevant. NBSAPs may identify the relevant agencies responsible for collecting data and compiling indicators. They may also identify the need for further development of these indicators and any associated capacity development needs.

Data collection & analysis

NBSAPs submitted by the EU, its Member States and Horizon Europe associated countries to the Online Reporting tool (ORT) by August 2025 were considered[24]. Each NBSAP was analyzed for the mention of the word “indicator”. Since many NBSAPs are only published in the country’s official language, Deep L was used to translate these words. The full list of NBSAPs included in the analysis is in Annex III.

6.iii Interviews

Between January and October 2025, experts[25] were contacted from Member States and Horizon Europe associated countries involved in developing and maintaining national

[24] Online Reporting tool (ORT) is the official portal for uploading NBSAPs, entering national targets, and submitting national reports. Available here. In decision 15/6, Parties are requested to submit their seventh national report by 28 February 2026 and their eighth national report by 30 June 2029. In decision 16/32, Parties endorsed the revised template for the seventh and eighth national reports.

[25] Parties to the CBD participating in the interview: Austria, Belgium, Finland, Hungary, Netherlands, Norway, Serbia, Sweden, UK. Participants were from the Ministries of Environment, Agriculture, Research Institutes, Environmental Institutes and Agencies, CHM Focal points, SBSTTA Focal points, Experts from bodies advising governments on nature conservation.

indicator frameworks, and participants working on the preparation and submission of the seventh national report to the CBD and invited them to a semi-structured interview.

The interviews centered around the indicator use to monitor and report progress towards the achievement of NBSAP targets and the implementation of actions. The interviews also explored whether and how biodiversity indicators and monitoring approaches were being adjusted to meet the requirements of the KMGBF. The interviews also shared lessons learned and best practices that could support other countries developing or improving their own national indicator frameworks.

Interviews lasted between 60 and 90 minutes. Most interviews were carried out online. Interviews were recorded and transcribed. For interviews carried out in national languages, written summaries were prepared in English. Analytical templates were prepared in Excel to identify recurring themes across interviews.

Limitations

Despite efforts to ensure the depth and reliability of the research results, the project team faced several limiting factors when contacting monitoring experts. Some experts declined to participate in the study due to lack of time, lack of direct relevance to their work or concerns about political implications. Some experts did not provide a reason. Other experts explained that they were unable to contribute because of significant delays with implementing national indicator frameworks or with preparing the seventh national report to the CBD. These experts noted that the process of refining and aligning national biodiversity indicators with the KMGBF had not yet begun. A few also suggested that the interviews would be better conducted at the end of 2025 as there will be some initial progress that could be shared. However, delays to interviews were not possible due to project timelines.

The interviews cover only nine countries, so the evidence from these interviews provides case-based examples and is not representative more widely. Further and more geographically balanced insight is necessary to provide a more complete picture of the state of national monitoring and the challenges associated with implementation.

7. Results & Discussion

7.i Sixth national report

Use of indicators to assess progress towards national targets

As of August 2025, 43 sixth national reports had been submitted to the Secretariat of the CBD (Fig 1); of which 31 were submitted via the online reporting tool (72%). Out of the 31 national reports submitted via the online reporting tool, 23 (74%) provided a list of indicators for more than half of their national targets.

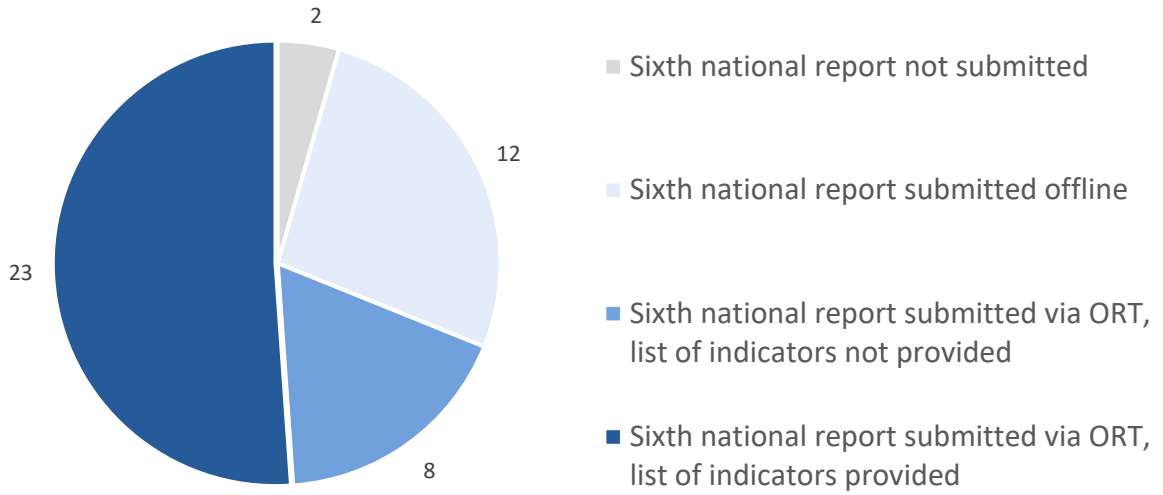

Fig 1: Number of sixth national reports submitted offline or via the online reporting tool (ORT) by Parties included in this analysis.

The number of national targets set by the EU, its Member States and Horizon Europe associated countries in sixth national reports analyzed varied considerably (Fig 2; mean: 16.5; median: 19; minimum: 1, maximum: 92,). So too did the number of indicators used to monitor progress across all national targets (mean: 40 median: 25; minimum: 0, maximum:159).

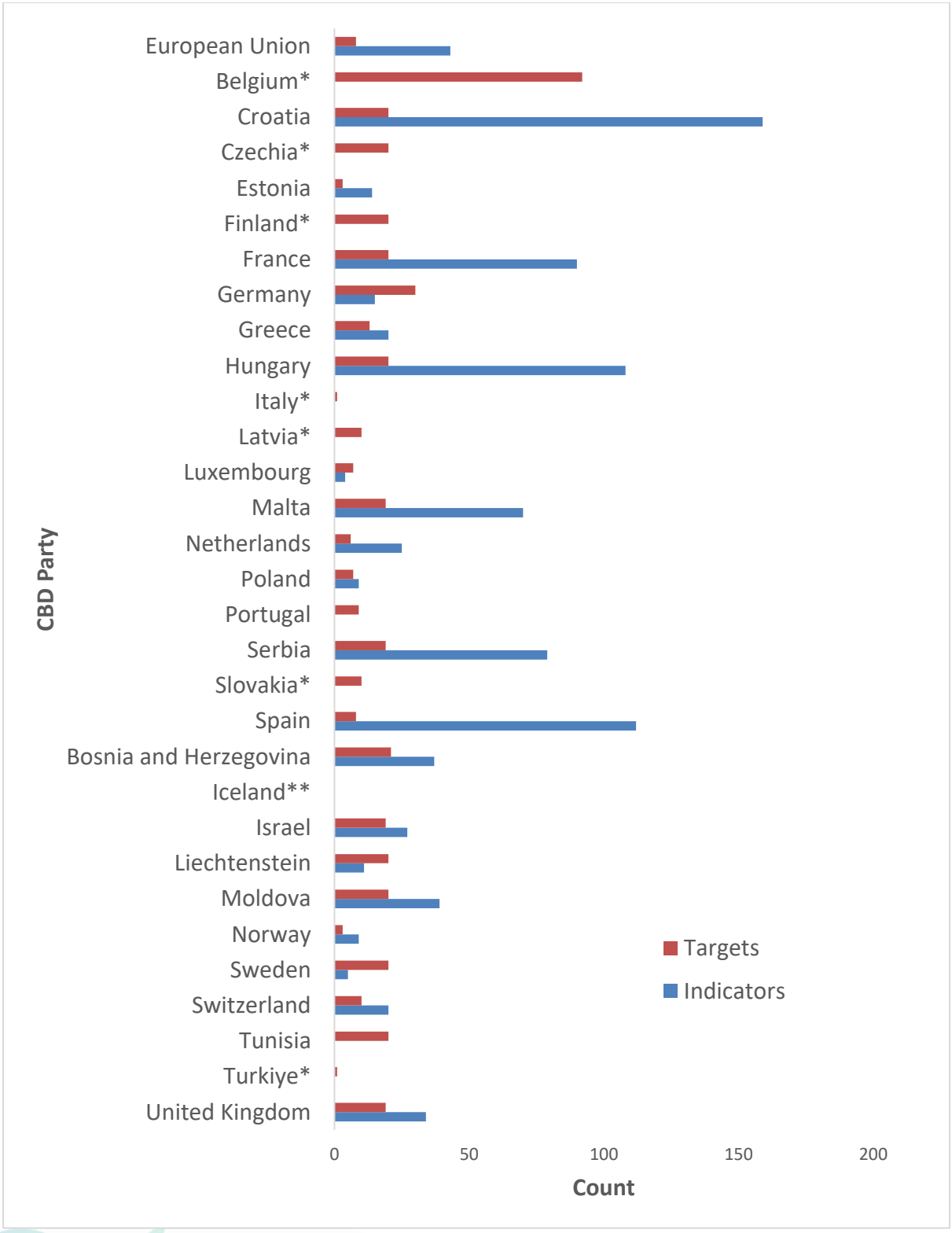

Figure 2: Number of national targets and individual unique indicators listed in sixth national reports submitted via the online reporting tool, by Parties included in this analysis. * Denotes countries that did not provide a list of indicators. ** Denotes countries that did not provide national targets or a list of indicators

Across the analyzed sixth national reports, the average number of indicators used to monitor progress towards a national target, was 3.4 (Fig 3). The greatest number of indicators used to monitor progress towards a single national target was 49, the next highest being 26 indicators. The least number of indicators used to monitor progress towards a single target was 0. In fact, 15 Parties (65%) did not use indicators to monitor progress towards at least one of their national targets.

The way in which Parties listed indicators in the sixth national report varied considerably. In some instances, Parties provided a comprehensive list of indicators, each with its own link to its corresponding metadata. The metadata provided detailed information on the indicator's definition, how it was calculated, its data source and its unit of measurement. Most Parties, however, simply provided a list of indicators without any additional information. A few Parties provided a link a to an indicator database but did not specify which indicators were used to track progress towards each national target.

Common indicators were used in the sixth national reports to measure progress towards national targets (e.g. conservation status of habitat types and species). However, without appropriate indicator metadata, it was not possible to accurately discern the degree of alignment regarding the indicators' methodologies, baselines and definitions.

Level of confidence and adequacy of monitoring information used to assess progress towards each national target

All Parties relied upon indicator information to assess progress towards at least one national target in the sixth national reports analyzed (Fig 4). Several Parties reported having sufficient, robust and readily available information to allow for all elements of the target to be assessed their national targets. However, expert opinion is still relied upon by many Parties for assessing progress towards their targets.

The adequacy of the information used to assess progress towards national targets varied (Fig. 5). Some Parties reported having monitoring systems in place that were able to provide sufficient information to assess progress towards most of their national targets. Other Parties had monitoring systems in place, however, they were only able to provide a portion of the information required. Several Parties reported not having a monitoring system in place in the country that could be used to assess progress towards certain national targets. Few Parties did not provide any information of indicated that no monitoring system was required.

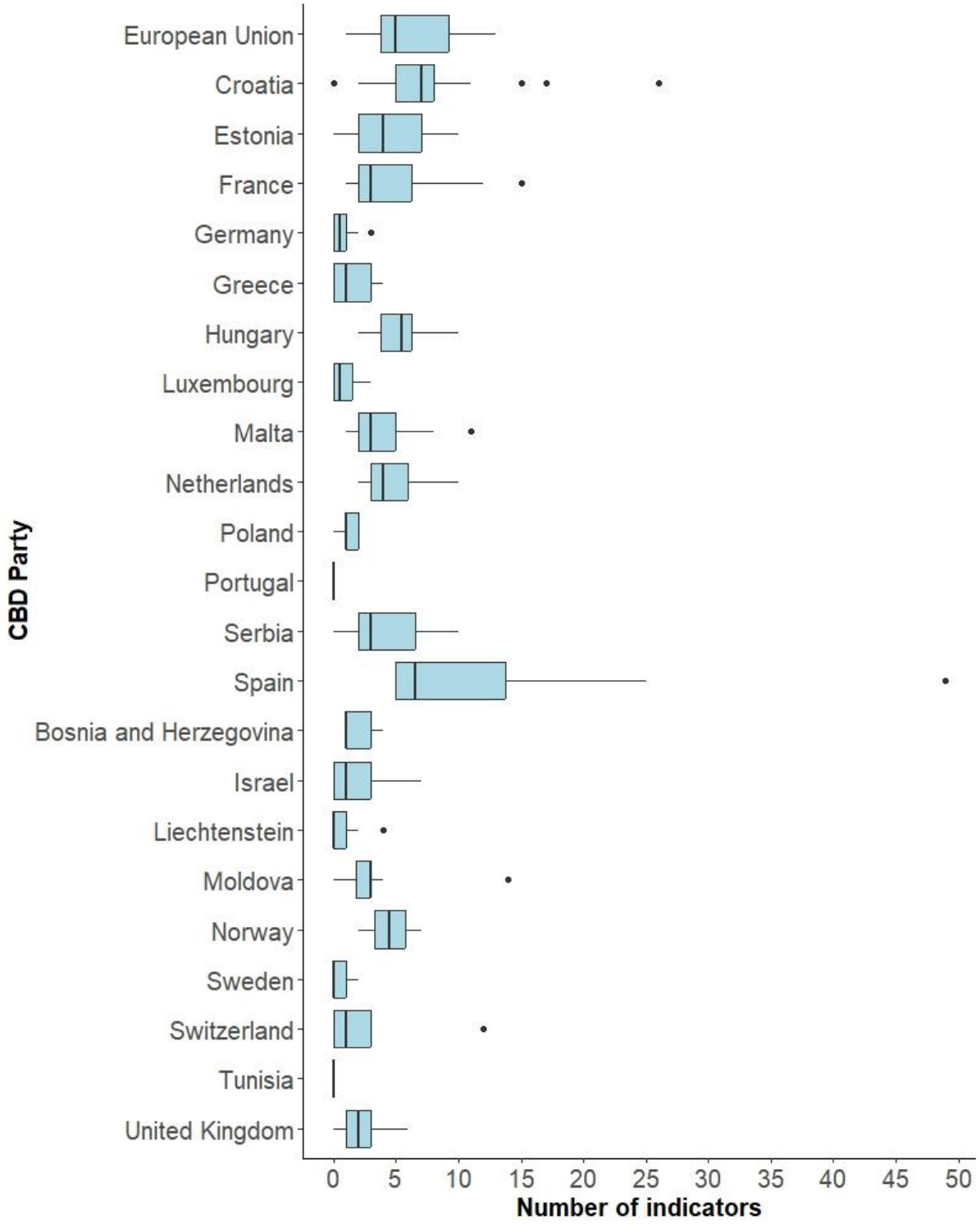

Fig 3: Boxplot showing summary statistics on the number of indicators used by Parties, in assessing progress towards their respective national targets. Solid line indicates the median, the top of the box is the 75th percentile, the bottom of the box is the 25th percentile and the whiskers represent the maximum and minimum values. Individual points represent outliers.

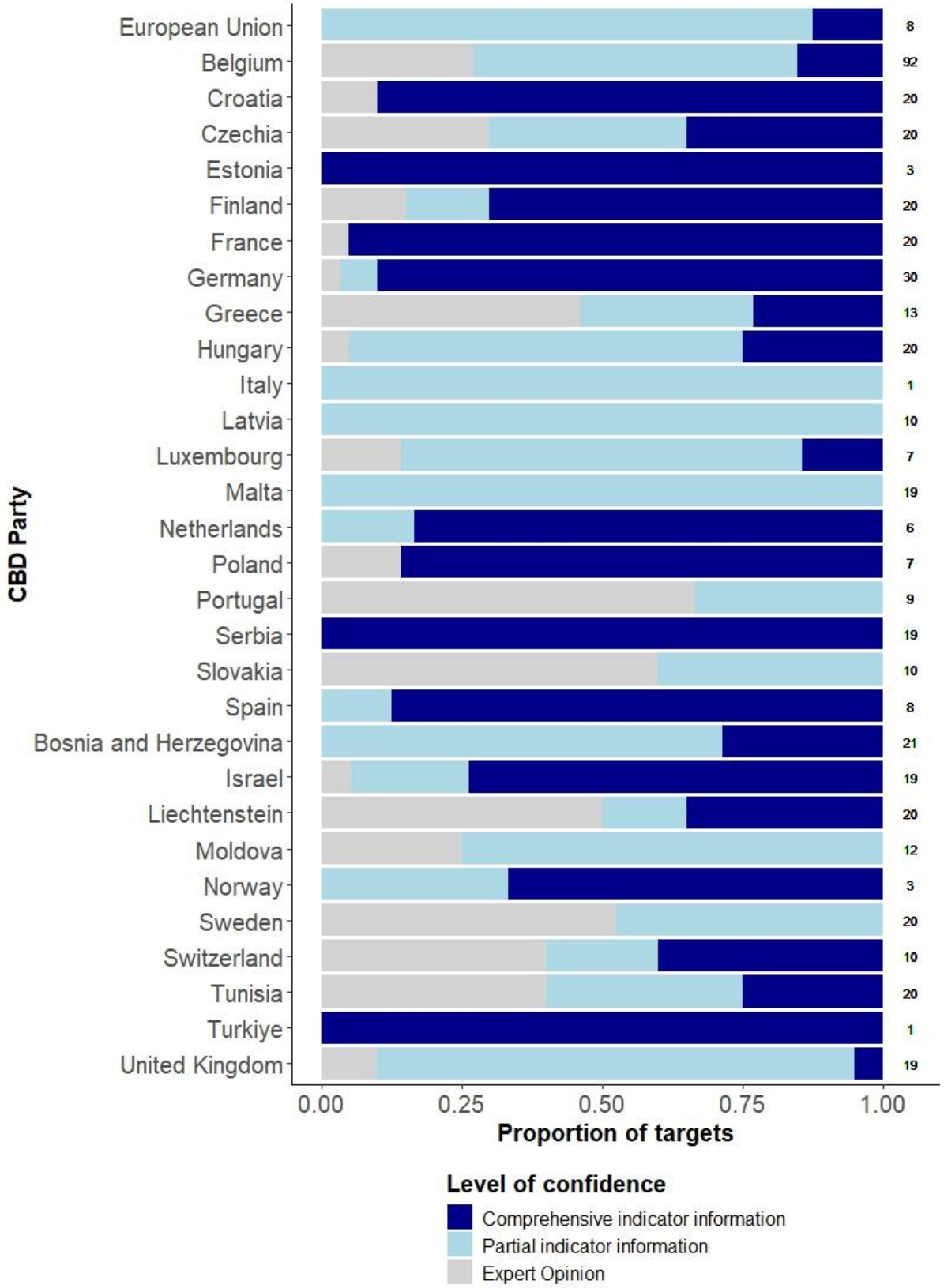

Fig 4: Level of confidence in the assessment of each national target as reported by the EU, its Member States and Horizon Europe associated countries in their sixth national reports. Total number of national targets listed on the right of the graph.

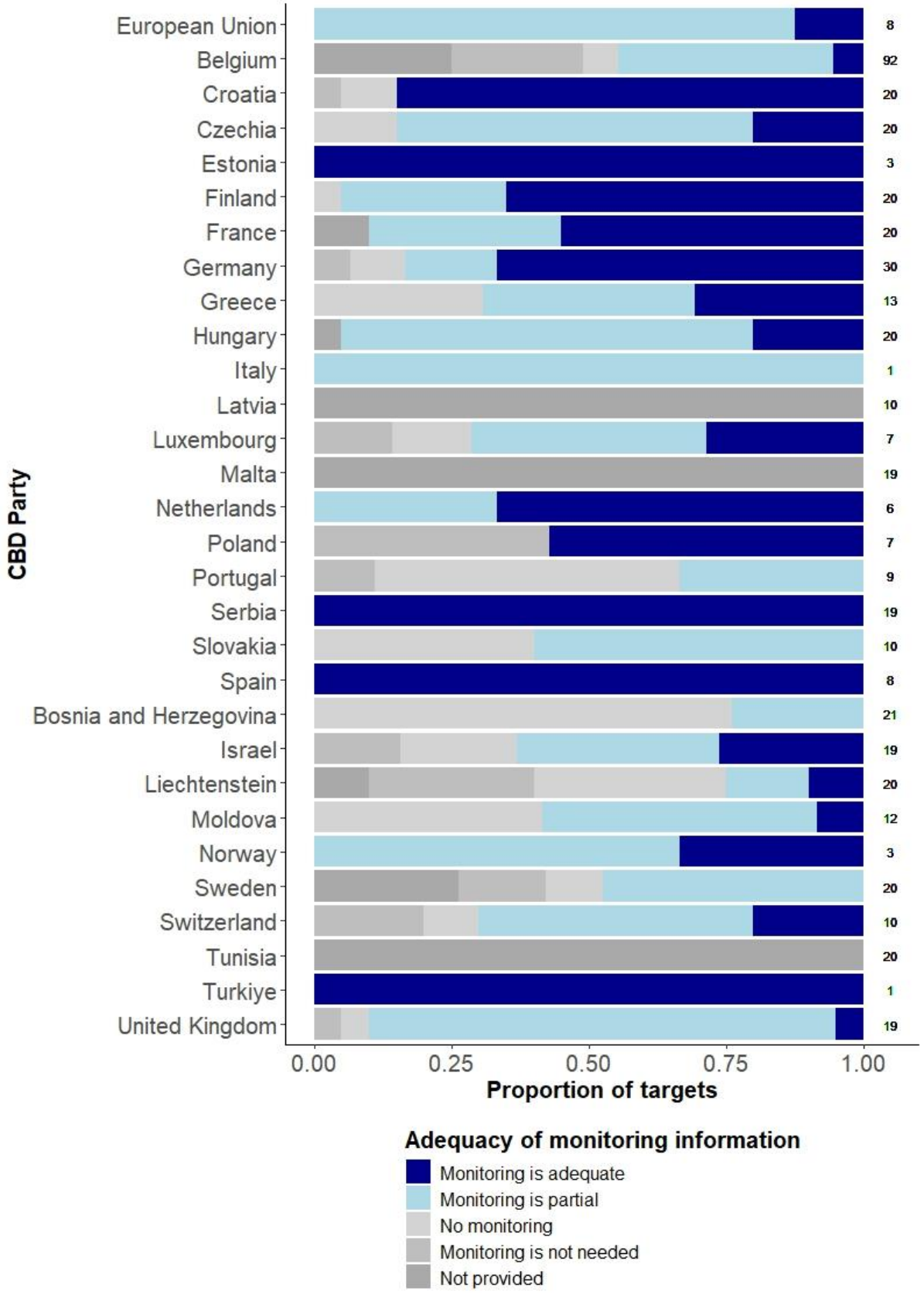

Fig 5: Adequacy of monitoring information to assess national target as reported by the EU, its Member States and Horizon Europe associated countries in their sixth national reports. Total number of national targets listed on the to the right of the graph.

7.ii NBSAPs

As of August 2025, the EU, 13 Member States and six Horizon Europe associated countries have submitted their NBSAP aligned with the KMGBF to the Online Reporting Tool (ORT) (Fig 6). While most NBSAPs contain a monitoring and evaluation plan, less than half provide details related to how specific indicators will be used for monitoring progress. Very few provide information on the link with the headline indicators adopted by the CDB in decision 15/5. Several Parties have reported challenges in using the ORT, which may contribute to delays in the submission of updated targets. In addition, many Parties had only recently revised their NBSAPs and, as indicated during the negotiations of CBD decision 15/6, had not planned to undertake a further update by the time of the seventh national report.

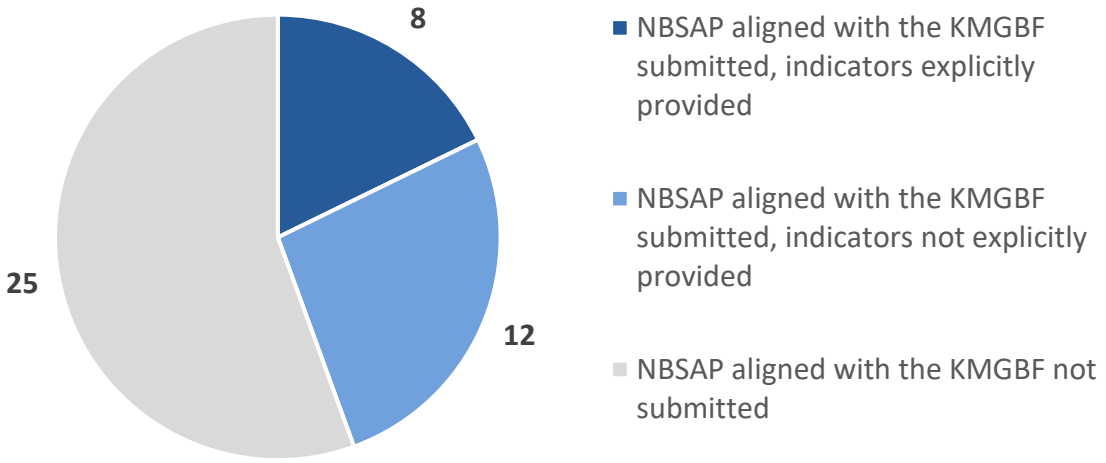

Fig 6: Number of Parties that have submitted an updated or revised their National Biodiversity Strategy and Action Plan (NBSAP) to the Secretariat to the CBD aligned with the Kunming-Montreal Global Biodiversity Framework (KMGBF), and have provided details related to how specific indicators will be used for monitoring, as of August 2025.

At the regional and subregional dialogues on NBSAPs several challenges of establishing or strengthening national monitoring systems were identified. [26] The dialogues also revealed challenges associated with the development of indicators to track progress, inform action, and enhance the action needed to build capacity.[27] Focusing on the outcomes of the regional dialogue on NBSAPs for the Western European and Others Group (WEOG) and for Parties covered by the European Subregional Technical and Scientific Cooperation Support Centre (TSC) challenges that countries raised in revising or updating their NBSAPs include:[28] :

i. Establishing coordination across different levels of government, ministries and subnational authorities can be complex and time-consuming.
ii. Engagement by Governments and rights holders and stakeholders is time-consuming. It requires communication skills, engagement skills and resources that do not always exist.
iii. Identifying which societal groups should be consulted/involved in the national biodiversity strategy and action plan process can be a challenging task.
iv. Stakeholders can have divergent/competing views and perspectives, which makes reaching consensus challenging and time-consuming.
v. Limited political will or changes in government priorities can affect the continuity and timely completion of NBSAP revisions, even when processes are advanced and broadly supported.

[26] Regional and subregional dialogues on NBSAPs are collaborative meetings organized under the Convention on Biological Diversity to support countries in revising or updating their National Biodiversity Strategies and Action Plans in line with the Kunming Montreal Global Biodiversity Framework.

[27] Summary of key findings from regional and subregional dialogues on national biodiversity strategies and action plans (CBD/SBI/5/2/Add.3)

[28] Report of the dialogue on the national biodiversity strategies and action plans organized with the European Union (CBD/NBSAP?OM/2024/11/2)

7.iii Interviews

Identifying management objectives and targets

Several of the Member States and Horizon Europe associated countries were in the process of revising and/or updating their NBSAPs when the interviews were conducted. In such instances, the interviewed experts noted that the process of identifying indicators and developing an indicator framework would be easier once the national targets were adopted so as to avoid unnecessary work. They also noted that this approach can delay implementation.

Some of the interviewed experts highlighted that their country revised their national biodiversity strategies prior to the adoption of the KMGBF. This presented its own unique challenge. Once the national biodiversity strategy is adopted it is difficult to make amendments. This is because the process for adoption of an NBSAP at the national level can be costly, involve many steps and require extensive stakeholder consultations prior to adoption.

Stakeholder engagement

Interviewees broadly agreed that national monitoring plans should be developed through participatory processes that are coordinated across several ministries, and which involve stakeholders from different sectors, including those mentioned in Section C of the KMGBF. Relevant stakeholders include all entities and people that can provide the necessary capacity, data and technical expertise. They also include those affected by monitoring activities or those that stand to benefit from monitoring activity outcomes. Drawing on a wide range of expertise helps ensure that the indicators are tailored to the socioeconomic context that they are intended to influence. It also builds support and ownership of the indicator(s).[29] Stakeholder involvement is also vital for securing the sustainability of monitoring arrangements (e.g. long-term financing, institutionalization).[30]

[29] Perino A., et al. 2022. Biodiversity post-2020: closing the gap between global targets and national-level implementation. Conservation Letters, **15**: e12848. **doi.org/10.1111/conl.12848**

[30] Werner, Florian A. & Gallo-Orsi, Umberto. 2016. Biodiversity Monitoring for Natural Resource Management. An Introductory Manual. GIZ, Eschborn and Bonn, Germany. Available here

Across interviews, experts emphasized that a successful biodiversity monitoring system relies on a combination of institutional coordination, voluntary engagement and stable mechanisms that ensure continuity beyond political cycles.

The involvement of the following groups in biodiversity monitoring systems was seen as particularly valuable:

Government Ministries across sectors

Integrating indicators into decision-making processes helps strengthen the visibility and impact of biodiversity monitoring within policy and governance frameworks. The global goal of halting biodiversity loss, through EU processes, has encouraged government ministries from different sectors (including agriculture and forestry) to contribute knowledge and assessments. Engaging ministries across different sectors would facilitate the role of the Ministries of the Environment in producing national indicators for implementation of the CBD.

NGOs

NGOs play an important role in biodiversity monitoring. They often coordinate data collection and analysis across networks of partner organizations. Many NGOs also collate and integrate data from research institutions, universities and citizen science initiatives. This contributes towards a broader and more consistent evidence base for monitoring. This also helps to ensure that data from diverse sources are accessible, comparable and usable for national and regional biodiversity indicator frameworks. Furthermore, networking and collaboration among government institutions, NGOs and other stakeholders within countries and regions significantly strengthen progress in the development of national indicators.[31]

Academia

Interviewed experts described the value of linking with scientists, universities or other research communities. Research programmes, supported by national academies or international funding, are important drivers of indicator development and use. They provide both scientific publications and datasets that form the evidence base for reporting.

[31] 2010 Biodiversity Indicators Partnership. 2010. Biodiversity indicators and the 2010 Target: Experiences and lessons learnt from the 2010 Biodiversity Indicators Partnership. Secretariat of the Convention on Biological Diversity, Montréal, Canada.

Engaging students and early career researchers provided substantial support for data collection and analysis at a comparably low cost. Aside from supporting national reporting, such efforts can help advance professional development through peer-reviewed publications and other scientific outputs.

Private sector

Experts pointed to the value of expanding the network of contributors to include private sector stakeholders. Studies have shown that private companies are becoming more interested in contributing to biodiversity conservation and monitoring. This change is a result of the growing appreciation of the economic value of biodiversity and its ecosystem services. It is also influenced by improved national legislation for economic development planning and by the more prominent and widespread recognition of biodiversity in society.

Citizen science

Citizen scientists play a significant role in gathering data, particularly for species indicators. Such volunteer contributions can help expand the spatial and temporal coverage of data collection. The involvement of citizens can also act as an effective outreach and education tool, helping to increase public awareness and participation in biodiversity conservation.[32]

However, experts found datasets created by citizen scientists are sometimes highly localized and not fully standardized at national or sub-national levels. This makes it difficult to integrate these datasets into national indicator frameworks.[33] A further challenge is that citizen science data can be subject to biases, which may limit their usefulness for official reporting obligations.[34] Additionally, monitoring from citizen science sometimes focuses on species that are not directly relevant for reporting obligations.

[32] Moersberger, H., et al (2022) Europa Biodiversity Observation Network: User and Policy Needs Assessment. EuropaBON/German Centre of Biodiversity Research (iDiv), Leipzig. Available here

[33] Lipsanen A., Riera L., Skov F., Lestina D. (2024) Towards national biodiversity monitoring coordination centres: comparison of governance, data interoperability and standards. Biodiversa+ report. Available here

[34] August, T., Fox, R., Roy, D.B. et al. Data-derived metrics describing the behaviour of field-based citizen scientists provide insights for project design and modelling bias. Sci Rep 10, 11009 (2020). https://doi.org/10.1038/s41598-020-67658-3

Institutional Coordination

Interviewed experts consistently underlined that strong institutional coordination is central to effective biodiversity monitoring and indicator development, particularly for national targets that require indicators linked to policy areas that fall outside the remit of Ministries of Environment. However, there is often a division of responsibilities between agencies that propose or manage indicators and separate government ministries that approve and publish them. Different units are often responsible for different goals and topic areas. Establishing clear governance structures, whereby government ministries lead indicator development and draw on data provided by specialized agencies, academia, NGOs, citizen science and the private sector, ensures coverage across thematic areas.

In addition, the establishment of accredited national statistics sets for biodiversity indicators, could enhance accountability by requiring adherence to strict codes of practice that guarantee the trustworthiness and quality of the data being drawn upon. This approach should be supported by dedicated teams that oversee indicator production, coordinate with data providers, and ensure robust publication processes (including sign-off by responsible statisticians).

Communication gaps can further complicate matters. Ministry representatives who attend international and/or regional meetings are not always the same individuals responsible for national reporting. As a result, technical information not consistently reaching the teams that need it.

A recurring theme throughout the interviews, was the importance of ensuring that indicator development and biodiversity monitoring are insulated from shifts in government policy, thereby maintaining continuity in long-term assessments. Experts highlighted that indicator development must continue independently of government changes, since monitoring provides the essential evidence base on the state of biodiversity and the impacts of actions. The Biodiversa+ Analysis report on how to implement and sustain long-term transnational biodiversity monitoring schemes stresses that lasting monitoring initiatives require more than informal collaborations, they require formalized legal arrangements.[35] According to the

[35] Bresadola, M. & Bjärhall, A. (2025) How to implement and sustain long term transnational biodiversity monitoring schemes? Biodiversa+ report. 37p.Available here

report, this process can be approached in stages: first by securing political-level commitments from participating countries and then by developing comprehensive legal frameworks to support them. Such mechanisms could help to reduce the risk that financial or economic pressures might cause individual countries to cut back on, or completely withdraw from, monitoring activities.

Identifying indicators and gathering data

The most common approach used to identify indicators was to organize workshops involving a diversity of stakeholders from different sectors. The workshops provided participants with an opportunity to review the indicators of the monitoring framework and to map them with their national targets. Some workshops also developed an inventory of existing national monitoring efforts, datasets, and indicators.

Many indicators have been developed for use at different scales (global, regional, national or local) and for reporting against various policy frameworks.[36] To measure progress towards the goals and targets of the KMGBF**,** Parties can undertake one or several of the following actions:

i. update existing indicators
ii. improve existing indicators
iii. develop new indicators.

In general, the interviewed experts from EU Member States and Horizon Europe associated countries reported that their countries decided to retain their existing indicators used for monitoring biodiversity actions and strategies, or to draw on indicators that are already in use under other frameworks. This reduces duplication of effort, ensures coherence across policy areas and makes data collection more efficient.

Some Parties have established an institutional structure for national biodiversity monitoring frameworks whereby the responsibilities of each institution/actor for providing specific data and the timeframe have been identified. They also allocated dedicated funding for these activities. Additionally, Parties have developed standardized protocols for monitoring that contain detailed descriptions of sampling methods and some instructions for data analysis.

[36] Burgess, N. et al. (2024). Global Metrics for Terrestrial Biodiversity. *Annual review of environment and resources*. Volume 49:673-709. **doi.org/10.1146/annurev-environ-121522-045106**

Updating indicator frameworks and drawing from monitoring schemes across multiple policy areas is a lengthy process. Experts found the update of indicator frameworks to be a difficult process to deliver within the timeframe of the seventh national report to the CBD, due in February 2026. With the time available and need for indicators to be validated, the interviewed experts believe there is not sufficient time to work on producing data for additional indicators. This challenge is often exacerbated by the misalignment between reporting cycles and the frequency and timing of data publication for certain indicators.

Many parties' efforts on monitoring and reporting on NBSAP implementation has historically emphasized species and ecosystem data. This could explain why several interviewed experts described the process of aligning the national monitoring framework with the KMGBF as particularly complex. The framework includes cross-cutting issues that extend beyond the mandate of the ministry/agency responsible for developing a national monitoring plan.

The text of each goal and target of the KMGBF is complex, containing multiple elements to be measured and reported independently to evaluate implementation. Experts recognized that it is impossible to measure all elements of each of the goals and targets of the KMGBF. This view is compounded by the fact that less than half of the elements of the goals and targets are measured by the indicators of the monitoring framework for the KMGBF.[37]

Reporting against indicators in the monitoring framework

The production of indicators is dependent on data. Relevant data for biodiversity indicators can be found in many different forms, including spatially mapped data, downloadable databases, statistical compendia, survey results, or data embedded within online documents. However, monitoring programmes are often fragmented, each using different approaches to gather the data that underpins indicators. Ensuring that standardized data suitable for producing the indicator at appropriate intervals are collected will require additional investment of resources.

[37] Affinito, F.,*et al.* Assessing coverage of the monitoring framework of the Kunming-Montreal Global Biodiversity Framework and opportunities to fill gaps. *Nat Ecol Evol* **9**, 1280–1294 (2025). https://doi.org/10.1038/s41559-025-02718-3

Headline indicators

Several interviewed experts noted that national data are either unavailable or not structured in a way that would support headline indicator production. Where data are available, they are often scattered across different sources. This requires extensive validation, review and careful aggregation. Therefore, the interviewed representatives of EU Member States and Horizon Europe associated countries felt they could only report using a subset of the headline indicators of the monitoring framework for the KMGBF, for their seventh national reports. This aligns with findings from a previous CO-OP 4CBD report looking into the capacity of Parties to produce the headline indicators at the national level.[38]

Some interviewed experts felt that there is a lack of clarity on how methodological developments were being communicated. They also felt that there are challenges related to using headline indicators of the monitoring framework and the associated metadata. While the AHTEG on indicators worked with headline indicator developers and agencies supporting methodological research and capacity building to ensure that each of these indicators had a robust methodology, many of the headline indicators do not have an established methodology.[39] Additional technical challenges can complicate the process. Some headline indicators are still under development, with little clarity on how they should be reported. This creates uncertainty for national teams. Others noted that, while the AHTEG guidance is valuable, it is extremely lengthy, and that small teams often lack the time to fully process it and align it with national metadata.

Component and complementary indicators

It was not possible to discern from the interviews with experts from EU Member States and Horizon Europe associated countries whether any of the component or complementary indicators will be used in the seventh national reports. However, based on an assessment of submissions in the ORT as of August 2025, only five countries out of the 26 that have

[38] Vukelic, M. et al. (2024). D3.1 Requirements and capacity needs report and recommendations in relation to the monitoring framework for the Kunming-Montreal Global Biodiversity Framework. Available here

[39] Affinito, F., Williams, J.M., Campbell, J.E. *et al.* Progress in developing and operationalizing the Monitoring Framework of the Global Biodiversity Framework. *Nat Ecol Evol* **8**, 2163–2171 (2024). https://doi.org/10.1038/s41559-024-02566-7

submitted at least one national target included one or more component and/or complementary indicator.

National indicators

National indicators are valuable because they are more likely to influence national policy. Nationally generated indicators were used 11 times more frequently compared to global indicators in the fifth national reports, and only one-fifth of the that were indicators used matched those identified by the Convention for tracking progress in the implementation of the Strategic Plan for Biodiversity 2011-2020[40]. However, the methods that are used are rarely standardized. This limits the conservation community's capacity to aggregate and calculate collective action limits the ability to track progress for targets at regional and global scales.

Reporting synergies

To cover the breadth of the KMGBF, integration across different sectors, such as agriculture, fisheries and forestry, it was seen as necessary to include mapping of relevant indicator sets that resulted from other policy processes.

Aligning indicators with existing processes can also reduce financial pressures by promoting parsimonious use of resources. Therefore, efforts should be made to improve cross-country, cross-institutional and cross-sectoral coordination of existing funding. Such efforts could enable more efficient use of current funding sources.

Multilateral Environmental Agreements (MEAs) and other intergovernmental processes.

CBD Parties are often encouraged and seeking opportunities to align with reporting processes of other MEAs or policy instruments. During the 2010-2020 period, few countries were found to have designed their NBSAP explicitly as a policy mechanism to support implementation of other MEAs or instruments.[41] However, relevant MEAs and policy

[40] Bhatt R et al. (2020) Uneven use of biodiversity indicators in 5th National Reports to the Convention on Biological Diversity. Environmental Conservation 47: 15–21. doi: 10.1017/S0376892919000365

[41] Lessons from the United Nations Development Programme, the United Nations Environment Programme and United Nations Environment Programme World Conservation Monitoring Centre in

instruments where there remain opportunities for alignment on monitoring and reporting include:

i. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), monitoring of international wildlife trade.
ii. Convention on the Conservation of Migratory Species, monitoring of populations and trends of selected migratory species.
iii. United Nations Framework Convention on Climate Change (UNFCCC), monitoring co-benefits from the conservation and protection of forest biodiversity under REDD+.
iv. UN Convention to Combat Desertification (UNCCD), monitoring of national action plans on land degradation and restoration.
v. Ramsar Convention on Wetlands, identification and monitoring of wetlands of international importance.
vi. National implementation plans relating to the 2030 Agenda for Sustainable Development.

European biodiversity policies

One of the challenges that EU Member States face is how the guidance relating to the KMGBF aligns with reporting guidance from other policy processes at the European level (Annex IV list of relevant EU biodiversity policies). For instance, some of the indicators that are requested for the nature restoration regulation are similar to indicators that are requested for ecosystem accounting. However, the three regulations have slightly different requirements on how that indicator needs to be reported. Experts noted that many European policy frameworks carry stronger legislative requirements than the CBD and therefore establish priorities for reporting. The existence of these different frameworks can create challenges in aligning national monitoring efforts with international obligations.

Financing development and use of indicators

A major challenge that was identified by experts is the lack of dedicated funding for biodiversity monitoring and indicator production, particularly in time for the seventh national report. It is often the case that no additional resources are provided to produce national reports. Work must therefore be carried out within the regular budgets and capacities of the

supporting the implementation of the Strategic Plan for Biodiversity 2011-2020 and suggestions for the Post-2020 Global Biodiversity Framework. (CBD/SBI/3/INF/30)

responsible agencies, institutes, and organizations, which can limit what could be achieved. These findings are in line with the 2024 COOP4CBD report,[42] which found that even when countries have sufficient methodological and data capacities, the resource-intensive nature of compiling and reporting indicators remains a major constraint.

Furthermore, increasing international and European reporting requirements across various policy frameworks can create difficult trade-offs in selecting which indicators to prioritize. Agencies have been forced to focus on those indicators that can be seen as “low-hanging fruit”, or those that can serve multiple policy frameworks simultaneously. This highlights how financial and staffing constraints can limit the scope and depth of national biodiversity reporting. Given this situation, experts highlighted that securing stable financing and staffing for monitoring systems is critical for maintaining effective indicator production. Some EU Member States and Horizon Europe associated countries are developing a comprehensive overview of its biodiversity monitoring landscape and assessing how existing funding streams can be integrated to facilitate a national monitoring approach that reflects the needs of national, EU and CBD reporting requirements, as well as scientific needs.

Options to support Parties in developing indicators aligned to the CBD

Other than increased funding, there are several ways in which global and regional assistance could be provided to support the development and production of indicators and associated monitoring and reporting.

Experts highlighted that webinars can be a very helpful means of sharing information, for example by providing the technical guidance needed to use the online reporting tool. It was suggested that additional webinars on the monitoring framework would be welcomed. It was communicated that a series focused on each of the headline indicators would prove particularly useful since Parties are requested to report against them in the seventh and eighth national reports. It is vital that this guidance is delivered in a timely manner, as to enable Parties to implement the necessary training.

It was also noted that broader peer-to-peer learning between countries would be valuable. These interactions foster extensive knowledge exchange between the scientific community

[42] Vukelic, M., et al. (2024). D3.1 Requirements and capacity needs reports and recommendations in relation to the monitoring framework for the Kunming-Montreal Global Biodiversity Framework. COOP4CBd Report. Available here

and relevant agencies and, when it has happened in the past, it was seen as particularly useful.

Targeted online meetings and workshops were identified as a practical way to strengthen sectoral engagement. By involving relevant colleagues only for specific agenda items, such meetings not only make participation more efficient but also help raise awareness in sectors that may not otherwise be actively involved in biodiversity monitoring.

Parties are faced with a tight reporting schedule. This makes it difficult to coordinate efforts at the national level and leaves little room for meaningful international collaboration. While such collaboration remains important and will be pursued, experts noted that the real benefits of peer-to-peer learning are more likely to be realized during the preparation of the eighth national reports.

Sharing experiences and reflections on the seventh national report was also deemed important. Having discussions about what worked well and what could be improved was viewed as useful for strengthening national reporting practices.

8. Conclusions

This report presented an overview of how EU Member States and Horizon Europe associated countries are implementing the monitoring framework of the KMGBF at national and regional levels. Based on interviews that were conducted with in-country experts, analysis of NBSAPs submitted to the ORT and a review of sixth national reports, the findings here highlight both best practices and ongoing challenges associated with establishing and updating national biodiversity monitoring systems.

Several common themes emerged across the interviews. Many Parties had revised or updated their NBSAPs prior to the adoption of the KMGBF. As revisions require extensive consultation, considerable administrative effort, and undergo various political approval processes, subsequent adjustments were identified as challenging and costly. This made it difficult for Parties to update their NBSAPs and submit national reports to the CBD in the timeline that they had agreed.

Indicator development is often constrained by the timing of NBSAP adoption, by limited institutional capacity and by the complexity of coordinating across ministries, sectors and government levels. In several cases, political uncertainty also affects the continuity and pace of national biodiversity planning processes.

Stakeholder engagement through participatory processes is widely recognized as fundamental for developing national monitoring plans. Countries that involve government agencies, academia, civil society, NGOs, citizen science initiatives, and the private sector tend to develop indicators that are more relevant to national contexts. These indicators are also widely supported and better institutionalized with stable financing.

Strong institutional coordination, voluntary contributions, and mechanisms that are resilient to political change are essential for maintaining consistent and effective monitoring over time. However, ensuring meaningful participation and inclusion of the ‘whole of society’ approach is still a challenge due to limited resources, a lack of clarity, fragmentation of responsibilities across institutions and the need for long-term coordination mechanisms that can outlast political cycles.

Indicators have primarily been identified through multi-stakeholder workshops that review the monitoring framework, assess existing datasets, and evaluate existing indicators against national targets.

Most countries have chosen to retain or adapt existing indicators to maintain coherence across policy areas and to avoid duplication. In addition, some countries have put in place formal institutional arrangements and developed standardized monitoring protocols that clarify who is responsible for providing specific indicator data, in which timeframe and dedicated funding for these activities.

Updating indicator frameworks remains a lengthy and resource-intensive process. It is complicated by tight reporting timelines, misaligned data publication cycles and KMGBF targets that extend beyond traditional species- and ecosystem-focused monitoring. Experts noted that measuring all elements of the KMGBF is not feasible, as less than half are covered by headline, component or complementary indicators. This variable coverage highlights the need for prioritization and realistic national approaches to be taken.

Funding and staffing limitations are major constraints. They often force agencies to focus on “low-hanging fruit” indicators that serve multiple frameworks. National data are frequently unavailable or are not structured for headline indicator production. They often require extensive validation and aggregation. As a result, Parties that were interviewed stressed that they will only be able to report a subset of headline indicators in their seventh national reports to the CBD.

Beyond financial support, experts highlighted practical ways to support further indicator development. Webinars for sharing technical guidance, particularly on the online reporting tool and the monitoring framework, were identified as valuable. The experts emphasized that creating targeted sessions on each headline indicator would be particularly helpful for aiding timely reporting for the seventh and eighth national reports.

Peer-to-peer learning and targeted workshops can enhance knowledge exchange between scientific communities, agencies and sectoral stakeholders. This improves coordination and raises awareness in sectors that are less engaged in biodiversity monitoring. Sharing lessons from the seventh national report can further inform preparations for the subsequent report and strengthen associated practices.

Overall, the findings underscore the need for early planning, broad multi-stakeholder engagement, flexible and inclusive governance structures and long-term financing to support effective national biodiversity monitoring aligned with the KMGBF.

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Annex I.

Monitoring of Implementation of the CBD prior to the adoption of the Kunming-Montreal Global Biodiversity Framework

Strategic Plan 2002-2010

In 2002, the COP adopted a Strategic Plan, with the mission "*to achieve, 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*". This strategic plan included a framework consisting of seven focal areas, 11 goals and 21 targets.[43] To assess progress at the global level towards the 2010 Biodiversity Target and to communicate effectively the status and trends in biodiversity, Parties agreed upon a set of global headline indicators to be used for reporting and to be used in the Global Biodiversity Outlook (GBO).[44, 45]

The second edition of the GBO, prepared in 2006, was published too early to determine whether progress was being made towards the 2010 target.[46] Instead, it aimed to establish baseline trends against which progress could be judged in future editions of the GBO. In the third edition of the GBO, published in 2010, ten of the fifteen headline indicators revealed trends that were unfavorable for biodiversity.[47] Yet, the amount and coverage of data was not sufficient to make statements with confidence for certain indicators.

[43] Strategic Plan: future evaluation of progress (UNEP/CBD/COP/DEC/VII/30)

[44] Framework for monitoring implementation of the achievement of the 2010 target and integration of targets into the thematic programmes of work (UNEP/CBD/COP/DEC/VIII/15)

[45] Secretariat of the Convention on Biological Diversity (2001) Global Biodiversity Outlook 1. Montreal. Available here

[46] Secretariat of the Convention on Biological Diversity (2006) Global Biodiversity Outlook 2. Montreal. Available here

[47] Secretariat of the Convention on Biological Diversity (2010) Global Biodiversity Outlook 3. Montreal Available here

Strategic Plan for Biodiversity 2011 - 2020

At the 10th meeting of the COP, held in Nagoya, Japan in 2010, Parties adopted the Strategic Plan for Biodiversity 2011-2020.[48] This strategy comprised five strategic goals and 20 Aichi Biodiversity Targets. It also included support mechanisms for implementation, monitoring and review that were aimed at taking urgent action towards the 2050 Vision on Biodiversity, 'Living in Harmony with Nature'. The Strategic Plan was agreed with the understanding that without progress in reducing the underlying causes of biodiversity loss, policies focused specifically on conservation were unlikely to overcome the pressures driving its decline. The Aichi Biodiversity Targets therefore focused not only on the state of biodiversity itself and the pressures affecting it, but also on drivers and responses well beyond the scope of environment ministries, nature protection agencies and conservation organizations.

At COP11, Parties took note of an indicative list of indicators available for assessing progress towards the goals of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets.[49] The list of indicators contained 96 operational indicators. These were classified as ready for use at the global level (22 indicators), as prioritized for development for use at the global level (36 indicators) or considered at the sub global level (39 indicators). The set of indicators for assessing progress in the attainment of the Aichi Biodiversity Targets was based on the following criteria:

i. the availability of the indicator
ii. its suitability for communication
iii. possibility for aggregation or disaggregation of data used
iv. its use in the third or fourth edition of the GBO. [50]

The fourth edition of the GBO, published in 2014, served as a checkpoint on the way to 2020, the end date for most of the Aichi Biodiversity Targets established under the Strategic

[48] The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (UNEP/CBD/COP/DEC/X/2)

[49] Monitoring progress in implementation of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (UNEP/CBD/COP/DEC/XI/3)

[50] Indicators for the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (CBD/COP/DEC/XIII/28)

Plan.[51] The assessment of progress towards the Aichi Biodiversity Targets in this edition of the GBO was informed by recent trends in 55 biodiversity-related indicators and their statistical extrapolation to 2020.The selected indicators suggested that policies and actions to support biodiversity were increasing. However, the drivers of biodiversity loss were also projected to increase. As a result, the state of biodiversity was expected to continue to decline. The fifth edition of the GBO, published in 2020, provided a final assessment of the progress made in reaching each of the 20 Aichi Biodiversity Targets.[52] The fifth edition of the GBO updated the analysis of indicators carried out in the fourth edition. It equally concluded, that despite the measures taken to date in support of conservation, the state of biodiversity would continue to decline due to the pressures.

Monitoring Implementation of the CBD, at the European level

EU Biodiversity Strategy 2010

The EU adopted its first biodiversity strategy (BDS) in 2006 as a response to the Millennium Ecosystem Assessment and with a commitment for addressing the loss of biodiversity on a European level.[53] The EU BDS 2010 entailed ten objectives including specific actions within four key policy areas and four key supporting measures.

The Streamlining European Biodiversity Indicators (SEBI) process started in 2005 to provide a streamlined and workable set of biodiversity indicators for Europe to measure progress towards the target of halting biodiversity loss in Europe by 2010.[54] A set of 26 biodiversity indicators was agreed under the SEBI process, a partnership led by the European Environment Agency that included country representatives and experts from across the European Union and beyond. At the end of 2008 the European Commission published a first assessment of EC Biodiversity Action Plan implementation using the SEBI 2010 indicators.

[51] Secretariat of the Convention on Biological Diversity (2014) Global Biodiversity Outlook 4. Montreal Available here

[52] Secretariat of the Convention on Biological Diversity (2020) Global Biodiversity Outlook 5. Montreal Available here

[53] European Commission. 2006. Halting the loss of biodiversity by 2010—And beyond. Sustaining ecosystem services for human well–being. COM(2016) 216 final. Available here

[54] European Environment Agency, 2007, Halting the loss of biodiversity by 2010: proposal for a first set of indicators to monitor progress in Europe, EEA Technical report No 11/2007. Available here

The overarching target of halting biodiversity loss in Europe by 2010 was missed despite some progress being made in certain areas.[55]

EU Biodiversity Strategy 2020

The European Commission adopted the EU BDS 2020 with the headline target of "halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss".[56] The BDS 2020 revolved around six key targets that each addressed specific issues such as invasive alien species and global biodiversity loss. Aside from setting ambitious targets, the BDS 2020 also demanded improvements in delivering progress reports on the strategy's implementation. This included data monitoring and assessment.

Based on a wide range of qualitative and quantitative sources, the EU failed to halt and reverse biodiversity loss by 2020 and did not achieve the objectives set out in its strategy despite individual successes in some areas.[57] The set of SEBI indicators was a key source of EU level evidence for the EU Biodiversity Strategy to 2020 and the sixth EU Report to the CBD.

EU Biodiversity Strategy 2030

The European Commission adopted the EU Biodiversity Strategy for 2030 (EU BDS) that aims to stop biodiversity loss and improve the state of ecosystems by 2030.[58] The EU BDS 2030 is structured around four pillars that provide the framework for over 100 actions to be implemented and 16 targets to be reached by 2030.

As mandated in the EU Biodiversity Strategy for 2030, the EC established the Knowledge Centre for Biodiversity (KCBD) in 2020, to support the implementation of the EU BDS and

[55] European Commission. 2010. The 2010 Assessment of Implementing the EU Biodiversity Action Plan. COM(2010) 548. Available here

[56] European Commission. 2011. Our life insurance, our natural capital: An EU biodiversity strategy to 2020. COM(2011) 244. Available here

[57] European Commission, 2022. Evaluation of the EU Biodiversity Strategy to 2020 (SWD/2022/284). Available here

[58] European Commission, 2020. EU Biodiversity Strategy for 2030 — Bringing nature back into our lives COM(2020) 380. Available here

the monitoring of progress towards its actions and targets.[59, 60] To that end, the KCBD has developed two progress monitoring tools:

- The EU BDS actions tracker: designed to track progress on the implementation of the actions stemming from the EU BDS 2030.[61] It presents a summary of the number of actions that have been completed, delayed, or are currently in progress and itemizes the more than 100 key actions to implement the EU BDS 2030.
- The EU BDS dashboard is a monitoring tool designed to track the progress of 16 targets outlined in the EU BDS 2030 using a set of indicators.[62] The dashboard is still in the process of being populated with indicators derived from a variety of EU reporting schemes and other independent sources.

[59] European Commission, 2020. Knowledge Centre for Biodiversity. Available here

[60] Viti M et al. (2020) Introducing the progress monitoring tools of the EU Biodiversity Strategy for 2030. Ecological Indicators Vol 164: doi.org/10.1016/j.ecolind.2024.112147.

[61] EU Biodiversity Strategy Actions Tracker. Available here

[62] EU Biodiversity Strategy dashboard. Available here

Annex II. Interview documents

Interview guide:

Introduction

Thank you for taking the time to speak with us today. This interview is part of the Horizon Europe Project, Co-operation for the Convention on Biological Diversity (CO-OP4CBD).

The project aims to enhance coordination within the European Union in advancing the implementation of the Convention on Biological Diversity (CBD) by harnessing expert knowledge effectively. This will enhance coherence in how the EU, its Member States, and Horizon Europe associated countries identify and utilize expertise, provide improved advice and support for CBD processes, and foster a more coordinated approach to engaging experts in implementing other intergovernmental agreements and processes.

To achieve this, CO-OP4CBD is structured around six work packages:

- Mapping the landscape of expertise for technical and scientific cooperation.
- Engaging expertise in CBD processes.
- Supporting monitoring, reporting and review.
- Supporting technical and scientific cooperation.
- Communication, dissemination and exploitation.
- Coordination, management and identifying synergies.

Global Context and Rationale

The monitoring framework for the Kunming-Montreal Global Biodiversity Framework (KMGBF), adopted in CBD decision 15/5, with technical updates to the headline and binary indicators endorsed at COP16, is comprised of a set of agreed indicators for tracking progress towards the Goals and Targets of the KMGBF adopted in decision 15/4. Parties are requested to use headline indicators and to provide responses on binary yes/no questions, as set out in the monitoring framework of the KMGBF, in their national reports, supplemented, as appropriate, by optional component and complementary indicators and other national indicators, as set out in decision 15/6.

Building on the findings of the recent capacity needs assessment, we aim to better understand how countries are preparing for the seventh national report to the Convention on Biological Diversity. Specifically, we seek to understand how countries are engaging in planning and reporting processes, including how they are using the headline indicators from the KMGBF.

Through this activity, we hope to identify and share lessons learned and practical approaches that can assist countries currently facing challenges in developing and implementing these indicators.

Purpose of the Interview

Our specific focus today is on determining best practices for establishing and implementing national indicator frameworks. This includes exploring potential institutional arrangements to support technical and scientific cooperation. Your insights will contribute to two key deliverables:

A report on best practices for designing and implementing national indicator frameworks.

A roadmap for better connecting tools to monitor, report progress, and assess the effectiveness of measures.

This conversation will help us understand:

- How countries have developed and maintained their national indicator frameworks.
- The evolution of biodiversity indicators and their role in monitoring national biodiversity strategies and action plans.
- How countries are adapting indicators to meet KMGBF requirements.
- Lessons learned or best practices that could assist others.

Logistics and Interview Consent

The interview is expected to take 1 hour. Participation is entirely voluntary, and you are free to withdraw at any time without any issues.

Your responses will be anonymized, and any personally identifiable data will be securely stored and accessible only to the research team. With your consent, the interview will be recorded and transcribed to ensure accuracy. However, if you prefer not to be recorded, please let us know in advance. No information will be attributed to you or your organization without explicit consent.

Use of Information

The results of this research will contribute to the project reports and potentially be used to produce scientific publications, as well as shared at conferences and dialogues. Data collected during the project may also be used for additional or future research. All personally identifiable information will be anonymized using a unique code, with personal details securely stored in

a locked file or on a secure computer, accessible only to the research team unless otherwise specified in the Consent Form.

You will have the opportunity to review any analyses or reports based on the data collected from your interview. If desired, you may provide feedback or request to withdraw your data from the project.

As part of the analysis, we would like to attribute the information you provide to at least the country level, and where relevant and with your agreement to your organization and area of expertise. This helps to provide important context for the findings. Please let us know if this level of attribution is acceptable to you. If not, would you be comfortable with attribution to the country level only?

Participant Consent and Compliance with the EU GDPR

Before we proceed to the questions, we would like to confirm that you also authorize the project CO-OP4CBD to use your personal data, in compliance with the European General Data Protection Regulation (GDPR) rules. Your personal data will be kept safe and confidential and will only be used for the purposes of the project.

All the data collected in this interview will be stored on a server area specially created for the project and all confidential information will be deleted 5 years after the end of the project (30/11/2026).

We would also like to confirm that you have received and reviewed the information about this project, including how your data will be used and protected.

Do you have any questions about the project or the interview process?

If you are comfortable and willing to proceed, may we have your verbal consent to participate in this interview?

☐ Yes ☐ No

INTERVIEW QUESTIONS

Overview of interview questions for monitoring the implementation of national biodiversity strategies and action plans (across different levels, e.g. measures, actions, and activities)

Section 1. History behind a country's use of indicators	
1.	Has your country adopted indicators for monitoring national biodiversity strategy and action plan (NBSAP)? If so, when were they first adopted?
2.	Could you describe the rationale or national priorities that influenced the selection of indicators for monitoring your NBSAP?
3,	What kind of resources, data and inter-institutional collaboration or coordination were needed for the production of these indicators?
4.	Has your country developed a national indicator framework for monitoring biodiversity? If yes, what have been the main developments in this framework since its initial adoption of indicator-based monitoring
Section 2. Current status in indicator production	
5.	Can you provide an overview of your country's existing national biodiversity indicator framework including its structure and key components?
6.	How is the institutional coordination organized for producing your biodiversity indicators (which agencies or departments are involved, and how do they collaborate)? • What are the main factors enabling the production of indicators for monitoring your NBSAP?
7	What lessons or best practices (development, implementation, or adaptation of the indicator framework) from your country's experience would you share with other nations developing or improving their own national indicators frameworks?
Section 3: Seventh National report	
8	How is your country adapting its national indicator framework to meet the requirements of the KMGBF? • Do you plan to retain the existing indicators or, re-structure them? • Can you use national data sources or need to rely on data from global sources? • Do you plan to use national indicators in parallel with KMGBF indicators? • What key resources, capacity-building efforts, or partnerships are being leveraged to support this transition? • How is your country approaching the integration of new thematic areas included in the Kunming-Montreal Global Biodiversity Framework (such as access and benefit-sharing, sustainable finance, gender) in your national

	indicator framework? Specifically, how are you ensuring cross-sectoral involvement in this process, including with public sector institutions?
9	Which headline indicators will you be reporting on in the seventh national report? Which headline indicators do you find most challenging to apply? What types of support (technical, data-related, institutional) would help you address these challenges? If not able to report on a headline indicator, do you have an alternative national indicator? If you're unable to report on this indicator in the seventh national report, is it likely you will be able to include it in the eighth national report? Do you currently have access to the datasets needed to report on the headline indicators? If not, what are the main gaps or barriers to obtaining the necessary data?
10	Are there any aspects of the monitoring framework that you find challenging or unclear? For example: • Have you reviewed the headline indicator metadata and find it helpful (here https://gbf-indicators.org/)? • Did you find webinars from AHTEG experts on specific indicators helpful? • Have the regional and/or subregional dialogues on national biodiversity strategies and action plans organised by the CBD you participated in been helpful? • Inputting data into the Online Reporting Tool

ANNEX III. Availability of sixth national reports and NBSAPs for the EU, Member States and Horizon Europe associated countries

Party	Sixth national reports			NBSAP aligned with KMGBF
	Submitted offline	Submitted via the online reporting tool	Indicators provided for >50% of national targets	
European Union	Yes	Yes	Yes	Yes
Austria	Yes	No	No	Yes
Belgium	Yes	Yes	No	Yes
Bulgaria	Yes	No	No	No
Croatia	Yes	Yes	Yes	No
Cyprus	Yes	No	No	No
Czechia	Yes	Yes	No	No
Denmark	Yes	No	No	Yes
Estonia	Yes	Yes	Yes	No
Finland	Yes	Yes	No	No
France	Yes	Yes	Yes	Yes
Germany	Yes	Yes	Yes	Yes
Greece	Yes	Yes	Yes	No
Hungary	Yes	Yes	Yes	Yes
Ireland	Yes	No	No	Yes
Italy	Yes	Yes	No	Yes
Latvia	Yes	Yes	No	No
Lithuania	No	No	No	No
Luxembourg	Yes	Yes	Yes	Yes
Malta	Yes	Yes	Yes	Yes
Netherlands	Yes	Yes	Yes	Yes
Poland	Yes	Yes	Yes	No
Portugal	Yes	Yes	Yes	No
Romania	No	No	No	No
Serbia	Yes	Yes	Yes	No
Slovakia	Yes	Yes	No	No
Slovenia	Yes	No	No	Yes
Spain	Yes	Yes	Yes	No
Albania	Yes	No	No	No
Armenia	Yes	No	No	No
Bosnia and Herzegovina	Yes	Yes	Yes	No
Georgia	Yes	No	No	No
Iceland	Yes	Yes	No	No
Israel	Yes	Yes	Yes	No
Liechtenstein	Yes	Yes	Yes	Yes
Moldova	Yes	Yes	Yes	Yes
Montenegro	Yes	No	No	No

North Macedonia	Yes	No	No	No
Norway	Yes	Yes	Yes	Yes
Sweden	Yes	Yes	Yes	No
Switzerland	Yes	Yes	Yes	Yes
Tunisia	Yes	Yes	Yes	Yes
Türkiye	Yes	Yes	No	No
Ukraine	Yes	No	No	No
United Kingdom	Yes	Yes	Yes	Yes

Annex IV: EU biodiversity policies

Birds Directive

The Birds Directive (Directive 79/409/EEC) adopted in 1979, and subsequently amended in 2009 (Directive 2009/147/EC), aims to protect all naturally occurring wild bird species present in the EU and their most important habitats. In addition to halting the decline or disappearance of bird species, the Directive aims to allow bird species to recover and thrive over the long-term.

Reporting format, as referred to in Article 12 of the Birds Directive, has two main parts

- Part A - General reporting format, it gives an overview of information on the implementation and general measures taken under Directive 2009/147/EC.
- Part B – Bird species' status and trends reporting format, including information on pressures, conservation measures and Special Protection Areas coverage

Deadline for deliveries for the reporting period 2019-2024 is the 31st of July

Habitats Directive

The Habitats Directive (Council Directive 92/43/EEC), adopted in 1992, aims to protect over a thousand species and 230 characteristic habitat types and ensure that these species and habitat types are maintained, or restored, to a favorable conservation status within the EU. In addition to halting the further decline or disappearance of these species and habitats, the Directive aims to allow them to recover and thrive over the long-term.

Reporting format, as referred to in Article 17 of the Habitats Directive, has five main parts

- Part A – General report: it gives an overview of the implementation and general measures taken under Directive 92/43/EEC.
- Part B – Species reports: it gives background information for assessment of the conservation status of a species.
- Part C –Species evaluation matrix: the evaluation matrix used to assess the conservation status of a species using the information in the Part B reports.
- Part D –Habitat type reports: it gives background information for assessment of the conservation status of a habitat type.
- Part E –Habitat type evaluation matrix: the evaluation matrix used to assess the conservation status of a habitat type using the information in the Part D reports.

Deadline for deliveries for the reporting period 2019-2024 is the 31st of July.

EU Nature restoration Law

The Nature Restoration Regulation (Regulation (EU) 2024/1991) aims to restore ecosystems, habitats and species across the EU's land and sea areas to enable the long-term and sustained recovery of biodiverse and resilient nature, contribute to achieving the EU's climate mitigation and climate adaptation objectives, and meet international commitments.

The Invasive Alien Species (IAS) Regulation

The Invasive Alien Species Regulation (Regulation (EU) 1143/2014) adopted in 2014, aims to prevent, minimize and mitigate the adverse impacts posed by these species on native biodiversity and ecosystem services; as well as limit social and economic damage.

Reporting Format, as referred to in Article 24 of the IAS Regulation, has three main sections

- Section A – information on IAS of Union concern and IAS of regional concern
- Section B – information on IAS of Member State concern
- Section C – Horizontal information: cross-cutting issues of the implementation of the IAS Regulation.

By 1 June 2019, and every six years thereafter, Member States shall update and transmit to the Commission the following:

Pollinator Initiative

The EU Pollinators Initiative is the key EU framework that tackles the decline of wild pollinators. First published in 2018 and revised in 2023, sets objectives for 2030 and related actions under three priorities:

I: Improving knowledge of pollinator decline, its causes and consequences

II: Improving pollinator conservation and tackling the causes of their decline

III: Mobilizing society and promoting strategic planning and cooperation at all levels

The EU Biodiversity Strategy for 2030 aims to reverse the decline of pollinators by 2030 as part of broader nature restoration goals. It also created the EU Biodiversity Platform and its pollinator working group, which oversees the Pollinators Initiative. Complementary initiatives under the European Green Deal, including the Farm to Fork, Zero Pollution, Forest, and Climate Adaptation Strategies, also help to tackle threats to pollinators.

By 2026, the European Commission and Member States are expected to finalize and test a standardized monitoring methodology for the EU Pollinator Monitoring Scheme (EU-PoMS). This methodology will produce reliable annual data on pollinator abundance and diversity, allowing assessment of progress in reversing pollinator decline across the EU. Once complete, Member States should deploy the scheme in practice[63].

Water Framework Directive

The Water Framework Directive (WFD), established in 2000, is the main EU legislation for protecting and managing water resources across inland, transitional, coastal, and groundwater systems.

It focuses on ensuring good qualitative and quantitative health, i.e. on reducing and removing pollution and on ensuring that there is enough water to support wildlife at the same time as human needs.

The Directive promotes an integrated, river basin–based approach, requiring cooperation between countries sharing water bodies.

The WFD requires Member States to develop and implement River Basin Management Plans (RBMPs) and Programmes of Measures to protect and, where necessary, restore water bodies, with the goal of achieving and maintaining good ecological and chemical status while preventing further deterioration. RBMPs serve as the principal instruments for putting the Directive into practice.

They are prepared after extensive public consultation and are valid for a six-year period.

Supported by two daughter directives on groundwater and surface water, the WFD also includes the list of priority substances that Member States must monitor in surface waters with environmental standards defined in the Environmental Quality Standards Directive. These lists and standards are reviewed every six years[64].

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[63] European Commission. (2023, January 24). *Revision of the EU Pollinators Initiative: A new deal for pollinators* (COM(2023) 35 final). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0261

[64] European Commission. “Water Framework Directive.” Environment, European Commission, https://environment.ec.europa.eu/topics/water/water-framework-directive_en.

Marine Strategy Framework Directive

Adopted in 2008, the Marine Strategy Framework Directive (MSFD) was designed to preserve clean, healthy, productive, and resilient marine ecosystems while securing the responsible use of marine resources. It's European Union's primary instrument for safeguarding the health of its coasts, seas, and oceans that aims to achieve a good environmental status in EU marine waters while ensuring the sustainable use of the natural resources that underpin marine-based economic and social activities.

By introducing the MSFD, the ecosystem-based approach became a legally binding and practical principle for the management of all EU marine environments. The directive is a cornerstone of the EU's efforts to meet its international commitments to marine protection and sustainable ocean management. It also supports the objectives of the European Green Deal, particularly the EU Biodiversity Strategy for 2030 and the Zero Pollution Action Plan.

Under this directive, each Member State is required to prepare and implement national marine strategies to achieve, or maintain, where already met, good environmental status. These strategies include regular environmental assessments, the establishment of targets and objectives, monitoring programmes, and management measures to enhance marine conditions. Additionally, the MSFD ensures that environmental information is made accessible to the public and that citizens can participate in environmental decision-making processes.

Since implementation is an ongoing and collaborative process, it requires close coordination among Member States. To support this, the Member States and the Commission, including regional sea conventions and various stakeholders, have established an informal coordination framework known as the Common Implementation Strategy.

The directive operates on six-year implementation cycles, during which Member States report on progress, and the European Commission provides its assessments and recommendations[65].

EU Forestry Strategy for 2030

The strategy sets out concrete actions to enhance both the quantity and quality of EU forests, while strengthening their protection, restoration, and resilience. Its overarching goal is to adapt

[65] "Marine environment." European Commission, https://environment.ec.europa.eu/topics/marine-environment_en.)

Europe's forests to evolving environmental conditions, extreme weather events, and the uncertainties caused by climate change.

Anchored in the European Green Deal and the EU 2030 Biodiversity Strategy, it acknowledges the central and multi-functional role of forests and the vital contribution of foresters and the forest-based value chain for achieving a sustainable and climate-neutral economy by 2050, ensuring that all ecosystems are restored, resilient, and adequately protected. This new strategy replaces the 2013 EU Forest Strategy, which was evaluated in 2018.

In cooperation with Member States, the European Commission will develop a voluntary "closer-to-nature" certification scheme, based on an impact assessment and stakeholder consultation. This scheme will promote biodiversity-friendly forest management practices through an EU-wide quality label.

The Commission, together with Member States and forest stakeholders, will build on the Forest Europe sustainable forest management criteria to identify additional indicators and establish thresholds or reference ranges for sustainable forest management. These will focus on forest ecosystem health, biodiversity, and climate objectives.

Member State authorities will prepare Strategic Plans for Forests, setting out a long-term vision for their forests and the forest-based sector over the next 10, 30, and 50 years. These plans will be developed by national or, where applicable, regional authorities.

Recognizing the importance of accurate data, the Strategy highlights the need to enhance forest monitoring to better assess the state and health of EU forests. To this end, the Commission will propose a legislative framework for Forest Observation, Reporting, and Data Collection, establishing an EU-wide integrated forest monitoring system.

An annual dashboard featuring key indicators, including remote-sensing data, will be developed and updated each year. In view of the increasing risks and rapidly changing forest conditions, the yearly reports will also include data on forest disturbances and updated risk assessments.