



Economic Commission for Europe**Committee on Environmental Policy****Working Group on Environmental
Monitoring and Assessment****Twenty-second session**

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Item 4 of the provisional agenda

**Reporting on the Shared Environmental
Information System to support a regular
process of environmental assessment****Draft final progress review report on the establishment of the
Shared Environmental Information System*****Note by the Working Group on Environmental Monitoring
and Assessment***Summary*

At the Eighth Environment for Europe Ministerial Conference (Batumi, Georgia, 8–10 June 2016), ministers invited countries to further develop their national information systems to have the Shared Environmental Information System in place by 2021 (ECE/BATUMI.CONF/2016/2/Add.1, para. 10).

At its twenty-fifth session (Geneva, 13–15 November 2019), the United Nations Economic Commission for Europe (ECE) Committee on Environmental Policy invited the Working Group on Environmental Monitoring and Assessment to oversee the preparation of a final review report on the establishment of the Shared Environmental Information System in Europe and Central Asia for consideration by the Committee, with a view to its subsequent forwarding to the next Environment for Europe Ministerial Conference as an information document (ECE/CEP/2019/15, para. 37 (j)).

The present document, prepared by the Working Group with support from the ECE secretariat, presents a first draft of the final progress review report for discussion. The report was prepared in accordance with the revised outline of the final review report on the establishment of the Shared Environmental Information System (ECE/CEP/AC.10/2020/5/Rev.1) and using the updated assessment framework for

* Agreement was reached to publish the present document after the standard publication date so as to include the most recent information.



monitoring progress in establishing the Shared Environmental Information System (ECE/CEP-CES/GE.1/2019/3).

The draft report is limited by the low number of self-assessments submitted by member States (18 as of 4 September 2020), which does not allow for conclusions to be drawn regarding the full establishment of the Shared Environmental Information System, and by difficulties in extracting results from the online reporting tool developed by the United Nations Environment Programme, due to deficiencies in the tool. The report therefore provides an overview of the preliminary results achieved based on the first 18 self-assessments.

The Working Group is expected to review the present draft report.

I. Introduction to the Shared Environmental Information System and the final progress review

1. The availability, timeliness and quality of relevant information form a solid foundation for sound policymaking and provide factual evidence on whether policy is effective in the long term. The availability of information also represents a powerful tool against the degree of uncertainty surrounding many issues requiring governance, while also enhancing public participation and awareness if that information is made public and easily accessible. This is particularly true when it comes to the preservation and improvement of environmental conditions, the formulation of sound environmental policy at all levels of governance, the attainment of global targets such as the Sustainable Development Goals and sound state-of-the-environment reporting at the national level.

2. Based on this rationale, in 2008, the European Commission set up a policy instrument known as the Shared Environmental Information System. This development was a clear response to the need for an integrated platform for the sharing of environmental data and experiences in developing knowledge-based environmental policy and a knowledge-based economy, making such data accessible to a vast array of users to increase environmental awareness and increasing the efficiency of environmental data production to inform decision-making. The Shared Environmental Information System should facilitate regular environmental assessments and reporting. At its heart are existing data and information flows relevant at the country and international levels. These flows should be linked with the support of modern technologies, such as the Internet, and shared between existing networks.

3. Subsequently, the Shared Environmental Information System has not only expanded geographically in its scope, but has also evolved into a multi-actor governance structure. A number of regional agencies and international organizations are operating and cooperating towards implementing the Shared Environmental Information System: the European Environment Agency, the United Nations Economic Commission for Europe (ECE) and the United Nations Environment Programme (UNEP) have gradually undertaken leading roles in jointly implementing the System across the pan-European region, working closely with national authorities to harmonize and make available and accessible environmental data.

4. The goal of the Shared Environmental Information System is to create an improved, decentralized system for the simplification, streamlining and modernization of existing environmental information-gathering systems. Such a system would improve the quality and facilitate the availability, accessibility and harmonization of environmental data. To meet this objective, the European Commission set out a list of seven principles underpinning the framework and operating mechanism of the Shared Environmental Information System.¹

5. The Shared Environmental Information System is thus based on three particular aspects of data quality: accessibility, interpretability and coherence of data. Accessibility relates to the degree of ease with which different users can access particular data and the sustainability of the means through which information is made available. The Shared Environmental Information System aims to move away from paper-based reporting and take full advantage of the latest information and communication technologies to provide a common platform for data derived from different sources, enabling harmonization, multi-purpose use and compatibility. Interpretability requires the availability of information that will help provide insights into the data collected. Lastly, coherence refers to consistency in data collection, production and release and comparability of data to broader analytical frameworks. Based on these combined aspects, the Shared Environmental Information System provides a powerful tool to improve data monitoring and sharing to provide better state-of-the-environment reports and sounder policy for the environment.

¹ See Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, Brussels, 1 February 2008, COM(2008) 46 final, "Towards a Shared Environmental Information System (SEIS)", pp. 2 and 3. Available at <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0046:FIN:EN:PDF>.

6. The Shared Environmental Information System is a set of principles, operationalized as a distributed environmental information system that is connected and integrated with the help of modern technologies. Reinforcing and building upon the principles of the Shared Environmental Information System, the European Environment Agency established three pillars defining the core elements needed for an effective and functional Shared Environmental Information System. These pillars are content, infrastructure and cooperation.

7. Content refers to the type of content required and the identification of potential sources to acquire such content. It also comprises information necessary to understand the changes in the state-of-the-environment as per specific thematic areas (for example, air, water and waste) and the interlinkages between them (as also addressed under the multilateral environmental agreements). Such data are available from various institutions at various levels and are crucial in terms of policymaking, but also awareness-raising. They need to follow agreed, common format requirements, at least for those data and information constituting international flows.

8. Infrastructure refers to an effective, web-enabled technical infrastructure, taking full advantage of pioneering information and communication technologies, including web services, to provide easy access to a wide range of environmental information and data flows so that they can be accessed by users, including experts, who can analyse the information and share it for further use.

9. Cooperation refers to the need for positive interaction between relevant actors at the various levels in the country and the designation of governance structures to manage human resources, inputs and networking. This pillar includes issues such as development or amendment of the legal framework and data policy agreements and protocols to enable data exchange, cooperation and coordination, while ensuring trust building and confidence between various data providers and between them and users.

10. The Shared Environmental Information System operates based on data flows belonging to particular environmental indicators compliant with international standards. In collaboration with the European Environment Agency, the ECE Working Group on Environmental Monitoring and Assessment agreed in 2007 upon a set of environmental indicators and their guidelines for application, eventually falling under 10 environmental thematic areas and comprising 49 indicators – the ECE Environmental Indicators.²

11. The governance of the Shared Environmental Information System involves a high degree of cooperation between international organizations, regional agencies, member States, national environmental authorities and other relevant stakeholders. The European Commission through the European Environment Agency, ECE and UNEP each play a role in the establishment and governance of the Shared Environmental Information System.

12. The European Environment Agency has been one of the leading proponents and major operators of the Shared Environmental Information System since the beginning. It has taken a leading role in laying out the core components of a functioning System. The European Environment Agency has led the projects supporting the implementation of the Shared Environmental Information System principles funded by the European Union European Neighbourhood Instrument since 2011, focusing on the European Neighbourhood countries in Eastern Europe and the Caucasus.

13. ECE has had an increasing role in the governance and practical implementation of the Shared Environmental Information System across the pan-European region through several of its processes, tools and bodies dedicated to environmental policy and, more specifically, environmental monitoring and assessment. These include the Committee on Environmental Policy, the Environment for Europe Ministerial process, the Working Group on Environmental Monitoring and Assessment, the Joint Task Force on Environmental Statistics and Indicators and the use of ECE environmental indicators in the harmonization of environmental data across the ECE region.

² See the online Guidelines for the Application of Environmental Indicators, available at www.unece.org/env/indicators.html.

14. UNEP has supported a variety of processes concerning the Shared Environmental Information System since its inception, collaborating with the European Environment Agency and ECE in the development of environmental indicators and the practical implementation of the Shared Environmental Information System across the pan-European region.

15. At the Seventh Environment for Europe Ministerial Conference (Nur-Sultan, 21–23 September 2011), ministers requested that a Shared Environmental Information System be developed to underpin a regular environment assessment process across the pan-European region (ECE/ASTANA.CONF/2011/2/Add.1, para. 14). More recently, at the Eighth Environment for Europe Ministerial Conference (Batumi, Georgia, 8–10 June 2016), ministers welcomed progress in developing the Shared Environmental Information System, but reiterated the need for countries to continue their efforts and to further develop their national information systems to have the System in place in the countries of Europe and Central Asia by 2021 (ECE/BATUMI.CONF/2016/2/Add.1, para. 10).

16. To assess progress in the implementation of the System and other outcomes of the Batumi Conference, ministers invited the Committee on Environmental Policy to convene, in 2018, a mid-term review to assess progress in the implementation of the main outcomes of the Conference (ECE/BATUMI.CONF/2016/2/Add.1, para. 16), including the development of the Shared Environmental Information System to support a regular process of environmental assessment.

17. At its twenty-fourth session (Geneva, 29–31 January 2019), the Committee on Environmental Policy welcomed the mid-term review report on the establishment of the Shared Environmental Information System (ECE/CEP/2019/7) prepared by the Working Group. The Committee also requested the Working Group to lead a further review of progress in establishing the Shared Environmental Information System in Europe and Central Asia in advance of the next Environment for Europe Ministerial Conference (ECE/CEP/2019/2, para. 27).

18. ECE member States, with the support of the secretariat and partner organizations, have made significant progress in establishing the Shared Environmental Information System since then, and there is a renewed and strengthened momentum for environmental monitoring and assessment in the lead up to the next Ministerial Conference, expected in 2021 or 2022.

19. This draft final progress review report, once finalized, aims to inform the Environment for Europe Ministerial Conference on the status of establishment of the Shared Environmental Information System in Europe and Central Asia.

20. The draft report presents the preliminary results of collected data for 22 data flows based on an assessment framework (ECE/CEP-CES/GE.1/2019/3) developed by the Working Group in close cooperation with ECE, UNEP and the European Environment Agency. The assessment framework focuses on the quality of the ECE environmental indicators and addresses limitations associated with the earlier assessment in 2016³ and the mid-term review conducted in 2018.

21. The purpose of the review is to show progress against agreed data quality criteria in order to allow countries to assess their capacities and help identify resource needs for regular environmental monitoring and assessment. Many other initiatives and projects have in parallel supported the establishment of environmental information systems applying the principles of the Shared Environmental Information System and have significantly contributed to the establishment of the System. Other initiatives include national reforms to improve information systems, several dedicated projects implemented by the European Environment Agency, projects implemented by UNEP in Central Asia and an open data-related project implemented by the ECE secretariat of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters together with the European Environment Agency. The European Environment Information and Observation Network – a partnership network of the European Environment

³ Report on progress in establishing the Shared Environmental Information System in support of regular reporting in the pan-European region (ECE/BATUMI.CONF/2016/8).

Agency and its member and cooperating countries – has significantly complemented the establishment of the Shared Environmental Information System in member and cooperating countries of the European Environment Agency.

22. The present draft report was prepared using an online reporting tool developed by UNEP based on the assessment framework. The draft report builds on countries' responses to a self-assessment questionnaire, as part of the assessment framework, covering seven quality categories that are associated with data production and use of the ECE environmental indicators. These are: relevance; accuracy; timeliness and punctuality; accessibility; clarity; comparability; and institutional and organizational arrangements. The present final review addresses all three pillars of the Shared Environmental Information System — content, infrastructure and cooperation — and all seven of its principles, unlike previous assessments. The finalized report will be presented as an information document at the Ninth Environment for Europe Ministerial Conference, expected in 2021 or 2022. The provision of timely, relevant and reliable information and indicators to policymakers and the public remains crucial for the Working Group and future Environment for Europe Ministerial Conferences.

23. The review is based upon self-assessments submitted by 18 of the 53 ECE member States in Europe and Central Asia:⁴ Austria, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, France, Georgia, Germany, Kazakhstan, Montenegro, North Macedonia, Republic of Moldova, Romania, Serbia, Slovakia, Spain, Sweden and Switzerland. While all member States with economies in transition submitted self-assessments for the mid-term review, only moderate participation, in particular from Central Asia and Caucasus, has been noted for the final review to date.

24. The present document is limited to the review of 22 data flows underpinning the 18 ECE core environmental indicators and covering nine environmental themes. The themes, indicators and data flows that were reviewed are shown in table 1 below.

25. More information on the assessment framework for the Shared Environmental Information System and data collection for the final progress review is provided in annex.

Table 1
Reviewed themes, core indicators and data flows

<i>Theme</i>	<i>Core indicators</i>	<i>Data flows</i>
A. Air pollution and ozone depletion	A1. Emissions of pollutants into the atmospheric air	Emissions of sulphur expressed in sulphur dioxide (total, stationary and mobile sources)
		Emissions of PM ₁₀ (total, stationary and mobile sources)
		Emissions of PM _{2.5} (total, stationary and mobile sources)
	A2. Ambient air quality in urban areas	Annual average concentration of sulphur dioxide – validated
		Annual average concentration of PM ₁₀ – validated
	A3. Consumption of ozone-depleting substances	Total ozone-depleting potential of chlorofluorocarbons

⁴ The 56 ECE member States, with the exception of Canada, Israel and the United States of America.

<i>Theme</i>	<i>Core indicators</i>	<i>Data flows</i>
B. Climate change	B3. Greenhouse gas emissions	Aggregated greenhouse gas emissions, including emissions/removals from land use, land-use change and forestry
C. Water	C1. Renewable freshwater resources	Total renewable freshwater resources
	C2. Freshwater abstraction	Total freshwater abstraction (per river basin, season and year) Total freshwater use
	C10. BOD and concentration of ammonium in rivers	Mean concentration of BOD after five days of incubation in major rivers
	C11. Nutrients in freshwater	Mean concentration of phosphates in major rivers
D. Biodiversity	D1. Protected areas	Total protected areas by International Union for Conservation of Nature categories
	D4. Threatened and protected species	Number of species threatened — mammals, birds, fish, reptiles, amphibians, invertebrates, vascular plants, mosses, lichens, fungi, algae
E. Land and soil	E1. Land uptake	Total land uptake
F. Agriculture	F2. Fertilizer consumption	Total consumption of mineral fertilizers
G. Energy	G1. Final energy consumption	Total final energy consumption
	G2. Total primary energy supply	Total primary energy supply (production, export, import, bins, stock changes)
	G3. Energy intensity	Final energy consumption/gross domestic product
	G4. Renewable energy consumption	Total primary energy supply by renewable energy category (hydropower, biomass, biofuels, wind, solar, geothermal, other)
H. Transport	H1. Passenger transport demand	Road transport (private cars, public transport, long-distance public transport)
I. Waste	I1. Waste generation	Total waste generation

Abbreviations: BOD, biochemical oxygen demand; PM, particulate matter less in diameter than the number of micrometres shown in the subscript.

II. Overview of main achievements and key findings

26. The main message that the Working Group wishes to convey to ministers of Environment at the Ninth Environment for Europe Ministerial Conference is that, overall, a Shared Environmental Information System has been successfully established in Europe and Central Asia. Currently, due to the limited number of self-assessments submitted, it is, however, difficult to confirm full establishment in all countries. While all member States have made significant efforts regarding the establishment of the System during the past years, some gaps remain that will need to be addressed. The System is not a static instrument and may evolve over time into fully integrated and open data systems based on the System's principles and adapt to future developments with the aim of informing policies in a holistic manner.

A. Working Group recommendations

27. Based on preliminary key findings and results of the present draft assessment, as presented in the sections below, the Working Group recommends that countries:

(a) Improve national legislation in place and close legislative gaps (23 per cent of data flows assessed during this review), where still existing for monitoring and reporting related to certain environmental themes;

(b) Continue work on the integration and harmonization of environmental data flows, in line with the principles of the Shared Environmental Information System beyond 2021;

(c) Enhance regular data production and the publication of environmental information online in accordance with the System's principles;

(d) Establish or improve institutional arrangements for regular production and sharing of data between various institutions at the national level, including for the monitoring of the Sustainable Development Goals and a green and circular economy. Environmental authorities are encouraged to work closely with their corresponding national statistical agencies and other relevant institutions to integrate and share information;

(e) Better align data collection processes with national policy contexts and targets and improve the use of available data flows and related indicators in the production of environmental assessments and reports;

(f) Improve the use of relevant environmental assessments and reports to measure progress against policy targets and objectives and improve policymaking;

(g) Regularly revise relevant indicators and data flows to inform the latest policies and to support decision-making related to the 2030 Agenda for Sustainable Development, a green and circular economy and other global policies;

(h) Address remaining gaps in the establishment of the Shared Environmental Information System, covering relevant pillars, thematic categories and data flows;

(i) Ensure that sufficient financial resources are allocated to the establishment, operation and maintenance of environmental monitoring and information systems through national budgets and/ or international support.

28. These recommendations will be revised once additional country reports are available and the online reporting tool is fully functional.

29. The Working Group also recommends that ECE, UNEP and the European Environmental Agency continue their long-standing and effective cooperation in support of the establishment of the Shared Environmental Information System in Europe and Central Asia. These organizations should also actively support countries in regular reviews of environmental information systems.

B. Key findings

30. The self-assessments confirm that many countries have continued to harmonize relevant data flows and improve the quality of the selected environmental indicators and underpinning data flows since the mid-term review. This demonstrates a positive trend since 2018.

31. Preliminary results reveal that theme B (climate change) has the highest performance scores, followed by I (waste), C (water), A (air pollution and ozone depletion), H (transport), G (energy), D (biodiversity), E (land and soil) and F (agriculture). Results at the indicator and data flow levels will be provided once the online reporting tool is fully functional.

32. The majority of the data flows (79 per cent) are used for more than one purpose including for national and international reporting obligations such as for state-of-the-environment reports, thematic reports, reporting under multilateral environmental agreements, the European Environment Agency/European Environment Information and Observation Network data flow reporting and for the production of indicators. All reporting countries except one stated that the data flows of “Annual average concentration of sulphur dioxide” and “Annual average concentration of PM₁₀”⁵ are used for multiple purposes and thus performed best, followed by the data flows “Mean concentration of [biochemical oxygen demand] BOD after five days of incubation in major rivers”, “Mean concentration of phosphates in major rivers” and “Aggregated [greenhouse gas] GHG emissions including emissions/removals from [land use, land-use change and forestry] LULUCF”. While these are positive developments, there is still room for improvement for other data flows to fully comply with the principles of the Shared Environmental Information System. The data flow “Emissions of PM_{2.5} (total, stationary and mobile sources)”⁶ performed worst, with only 10 countries using the data flow for multiple purposes. The majority (61 per cent) of countries that submitted a self-assessment regularly (annually, every second year or every four or five years) produce an indicator-based national state-of-the-environment report. Twenty-two per cent of countries do not produce an indicator-based report or not with regular frequency, and 17 per cent did not provide a reply to this question. One country stated that an indicator-based report would be produced in 2020. A very positive development in recent years is that most countries (89 per cent) produce integrated environmental reports covering several thematic areas.

33. These positive developments over the past years demonstrate the inherent value of continued monitoring of the establishment of the Shared Environmental Information System through a regular self-assessment of progress, particularly as the System improves the production, the quality and, especially, the use of relevant environmental data flows across multiple contexts, bodies of knowledge and policymaking approaches. In future, the multiple use of data flows should be further fostered, including for integrated policies.

34. Some limitations still exist in comparing some of the data flows across subregions or between countries. A prominent example remains that of protected areas.

35. These findings will be revised once additional country reports are available and the online reporting tool is fully functional.

C. Pillars of the Shared Environmental Information System

36. The Shared Environmental Information System is a set of principles, operationalized as a distributed environmental information system that is connected and integrated with the help of modern technologies. The System’s pillars reinforce the importance of linking environmental data flows, networks, policymakers and governance. Like for the mid-term review, all three pillars are considered within the draft final progress review report to account for the entire data value chain.

⁵ Particulate matter less than 10 micrometres in diameter.

⁶ Particulate matter less than 2.5 micrometres in diameter.

1. Content

37. Countries reported that nearly all 22 data flows are published regularly (87 per cent). In most cases, data flows are published annually. This is a very positive development and confirms the added value of the Shared Environmental Information System as a continuous source of high-quality information and data for decision makers and the public.

38. The data flows are most often presented as complete factsheets (67 per cent) and are used to produce different types of content such as reports and visual representations. This too is a positive development.

2. Infrastructure

39. The majority of the 22 data flows (76 per cent) are readily available and accessible online for users on national platforms. This suggests a positive development regarding the principles of accessibility and availability of the data flows, in part due to efforts to establish the System.

40. In most cases, the 22 data flows are readily available and accessible on integrated platforms, with remaining limitations for some data flows. As remarked in the mid-term review, inconsistencies have been found in the self-assessments regarding the links provided for the individual data flows, as many are not operational or do not indicate the data flow but rather a general source or platform (ECE/CEP/2019/7, para. 18).

41. Most countries that have submitted a self-assessment have established procedures for data validation and revision for all 22 data flows. For 71 per cent of data flows, validation procedures were reported, and for 59 per cent of data flows, procedures for data revision are in place. While this result implies that the trustworthiness of data has increased over the past years, there are still inconsistencies remaining regarding some countries' replies. Some countries have formal procedures in place and apply international standards for data validation, while other countries follow internal validation practices without having them formalized.

42. According to the reports received, metadata are available for 73 per cent of the 22 data flows, thus ensuring greater clarity and quality of the information provided.

3. Cooperation

43. Countries reported having in place institutional arrangements for the regular production and sharing of data between various institutions at the national level (68 per cent). Interaction between relevant actors at the local, regional and national levels in the country and efficient governance to manage human resources, inputs and networking are crucial.

44. During the mid-term review, the need to improve institutional cooperation between fragmented data producers and users was highlighted. The continued process of establishment of the Shared Environmental Information System, the self-assessment questionnaire and the final progress review facilitated further interaction between data producers who normally do not share or exchange information. This demonstrates the added value of the Shared Environmental Information System as an instrument that can improve interaction and communication between data producers (ECE/CEP/2019/7, para. 21). This work should continue to ensure in full efficient interaction between the various stakeholders.

III. Lessons learned and challenges

45. The final progress review report is a milestone in reviewing the establishment of the Shared Environmental Information System in preparation for the Ninth Environment for Europe Ministerial Conference. While an assessment in 2016 (ECE/BATUMI.CONF/2016/8) did not address data quality aspects and the mid-term review was limited to 3 indicators and 3 data flows, the final progress review considered 22 data flows covering 18 ECE core environmental indicators across 9 environmental themes by using the updated assessment framework. It considers all three pillars of the System in a more holistic manner. These are important and positive developments. Nevertheless, due to the limited number of self-

assessments submitted by countries for the final progress review, it is not yet possible to determine whether the Shared Environmental Information System is fully in place in Europe and Central Asia.

46. Full participation in the preparation of the report by all countries in the pan-European region was not achieved. Participation from European Union member States and countries of the Caucasus, Central Asia and Eastern Europe remained moderate. Further steps to achieve wider participation are therefore needed. These should include collaborative efforts, together with the European Environment Agency and UNEP, to identify mechanisms to motivate countries to participate in the review of progress and to report on the 22 data flows associated with the ECE environmental indicators, to provide a more complete picture in preparation for the Ninth Environment for Europe Ministerial Conference.

47. The purpose of regular self-assessment is to encourage countries to implement measures that address gaps in the establishment of the System over time. The assessment framework consequently provides a tool that allows countries to continue to monitor progress and identify needed resources and gaps to be closed.

48. It would also be relevant for any future reviews to better assess how countries use the data in policymaking, monitoring progress towards policy targets and streamlining reporting processes.

49. The online reporting tool,⁷ developed by UNEP in consultation with the Working Group and supported by ECE, was made available for the preparation of the present report. The review showed that deficiencies remain in the online reporting tool and that these need to be addressed rapidly.

50. The present report is based on self-assessments by countries. The secretariat has not verified the information from the online tool. Inconsistencies in the information provided do, however, suggest that there is a need for a validation mechanism. Any future reviews may consider this and other gaps identified.

IV. Further steps

51. The establishment of the Shared Environmental Information System is supported by several international capacity development mechanisms in the pan-European region, including the ECE Working Group on Environmental Monitoring and Assessment, the Joint Task Force on Environmental Statistics and Indicators and relevant projects being carried out by ECE, the European Environment Agency and UNEP. These activities are being implemented with financial support from donor countries, the European Union European Neighbourhood Instrument and the United Nations Development Account.

52. Furthermore, the European Environment Information and Observation Network has significantly complemented the establishment of the Shared Environmental Information System in member and cooperating countries of the European Environment Agency.

53. These initiatives and projects provide valuable support for the establishment of environmental information systems, for the production and use of ECE environmental indicators and to environmental monitoring and assessment overall in a harmonized and integrated manner.

54. The gaps identified by the self-assessments indicate that countries still need assistance to fully implement the pillars and principles of the Shared Environmental Information System and for the full production and sharing of all data flows associated with the ECE environmental indicators also beyond 2021.

55. It is expected that regular reviews of the implementation of the Shared Environmental Information System according to its principles will help to address gaps and, by doing so, ensure that it supports regular assessments and reporting in the region beyond 2021.

⁷ Available at <https://environmentlive.unep.org/seis2.0/Login/index>.

56. It is recommended that the establishment of the System and the production of relevant data flows that underpin the ECE environmental indicators be harmonized and aligned with the revised ECE environmental indicators when finalized. The ECE environmental indicators are being revised by the Joint Task Force and aligned with the Framework for the Development of Environmental Statistics and monitoring and assessment processes at the regional and global levels, including in the context of the 2030 Agenda and a green and circular economy, to enhance their policy relevance.

57. The expected timeline for the finalization of the final progress review report of the Shared Environmental Information System to 2022 is as follows:

(a) October 2020: the Working Group reviews and revises the draft final progress review report, as necessary;

(b) October–November 2020: countries that have not yet submitted a self-assessment and wish to do so provide data in the online tool;

(c) May 2021: the Working Group reviews and revises the final progress review report, as necessary;

(d) November 2021: the Committee on Environmental Policy considers the final progress report on the establishment of the Shared Environmental Information System in Europe and Central Asia;

(e) In 2022: Ministers consider the final review report at the Ninth Environment for Europe Ministerial Conference.

V. Fact sheets on key findings and messages

58. Table 2 below lists the ECE member States in Europe and Central Asia and whether and by what means they have reported their self-assessments. Table 3 below indicates which themes reporting countries have covered.

59. Factsheets on key findings and messages will be prepared for the final version of the report.

Table 2

Overview of self-assessment submissions by country

<i>Country</i>	<i>Format of submitted report: online and/or spreadsheet, or none</i>
Albania	None
Andorra	None
Armenia	None
Austria	Online, spreadsheet
Azerbaijan	None
Belarus	Online, spreadsheet
Belgium	None
Bosnia and Herzegovina	Online
Bulgaria	Online
Croatia	Spreadsheet
Cyprus	None
Czechia	None
Denmark	None

<i>Country</i>	<i>Format of submitted report: online and/or spreadsheet, or none</i>
Estonia	None
Finland	None
France	Online
Georgia	Online
Germany	Online
Greece	None
Hungary	None
Iceland	None
Ireland	None
Italy	None
Kazakhstan	Online, spreadsheet
Kyrgyzstan	None
Latvia	None
Liechtenstein	None
Lithuania	None
Luxembourg	None
Malta	None
Monaco	None
Montenegro	Online, spreadsheet
Netherlands	None
Norway	None
North Macedonia	Online
Poland	None
Portugal	None
Rep. of Moldova	Online
Romania	Online
Russian Federation	None
San Marino	None
Serbia	Online
Slovakia	Online
Slovenia	None
Spain	Spreadsheet
Sweden	Online
Switzerland	Spreadsheet

<i>Country</i>	<i>Format of submitted report: online and/or spreadsheet, or none</i>
Tajikistan	None
Turkey	None
Turkmenistan	None
Ukraine	None
United Kingdom	None
Uzbekistan	None

Table 3

Overview of whether thematic level questions were answered by countries (yes or no)

<i>Countries</i>	<i>Environmental theme</i>									
	<i>Agriculture</i>	<i>Air pollution and ozone depletion</i>	<i>Biodiversity</i>	<i>Climate change</i>	<i>Energy</i>	<i>Land and soil</i>	<i>Transport</i>	<i>Waste</i>	<i>Water</i>	
Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Belarus	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bosnia and Herzegovina	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bulgaria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Croatia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
France	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Georgia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Germany	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Kazakhstan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Montenegro	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes
North Macedonia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rep. of Moldova	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Romania	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serbia*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Slovakia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spain*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sweden	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Switzerland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Thematic questions were answered only in part.

Annex

Background information

I. Assessment framework

1. The Working Group on Environmental Monitoring and Assessment agreed at its sixteenth session (Istanbul, Turkey, 16 and 17 April 2015) that the data and information included in the preparation of the mid-term review report should allow for the measurement of progress towards agreed global and regional priorities in line, as relevant, with global and regional multilateral environmental agreements (ECE/CEP/AC.10/2015/2, paras. 7–9). The Working Group also agreed on a first development milestone: 67 specific data flows that every country in the pan-European region should aim to make available and accessible online during 2015 (ECE/CEP/AC.10/2015/2, para. 14).
2. During the first assessment in 2016, full participation of all countries in the pan-European region could not be achieved and the assessment was not able to take into account internationally accepted standards for data set production or data quality, given the limited resources available. Neither data quality nor data usage was, as such, assessed. It was suggested that those shortcomings should be rectified in the next review round (ECE/BATUMI.CONF/2016/8, para. 5).
3. At its eighteenth session (Geneva, 28 and 29 June 2016), the Working Group agreed that the secretariat would revise the review criteria and integrate a quality component as part of the assessment framework. The purpose of that continuing review of the assessment framework was to utilize the revised assessment framework in the preparation of the mid-term review report (ECE/CEP/AC.10/2016/2, para. 43 (a)).
4. At its nineteenth session (Geneva, 27 and 28 June 2017), the Working Group examined the results of the review of the assessment framework (see ECE/CEP/AC.10/2017/5). The Working Group agreed that it would be necessary to pilot the assessment framework and its associated reporting application before moving on to data collection for the mid-term assessment report. It was also noted that steps would need to be taken to ensure that the assessment framework was harmonized with other initiatives (ECE/CEP/AC.10/2017/2, para. 48).
5. The self-assessment questionnaire, as part of the assessment framework, has been developed by the Working Group together with ECE, UNEP and the European Environment Agency. The questionnaire is available as an online reporting tool¹ and, upon request to the secretariat, as a Microsoft Excel workbook. These two reporting tools provided the basis for piloting the reporting across the pan-European region and for preparing the mid-term review report.
6. During a technical meeting and country workshop (Vienna, 13–15 September 2017), the self-assessment questionnaire was further developed with countries that had volunteered to do so at the thirteenth session of the Joint Task Force on Environmental Statistics and Indicators (Geneva, 29 and 30 June 2017). The workshop was attended by representatives of ECE, UNEP and the European Environment Agency.
7. Based on the outcomes of the Vienna workshop, the self-assessment questionnaire was updated and then further discussed during the fourteenth session of the Joint Task Force (Rome, 2 and 3 October 2017). During this meeting, member States agreed on the modalities and data flows to be included in the mid-term review report (ECE/CEP-CES/GE.1/2017/6, paras. 64–65).
8. At the Working Group's twentieth session (Geneva, 3 and 4 September 2018), the secretariat presented the assessment framework and the draft mid-term review report.

¹ Available at <https://environmentlive.unep.org/seis2.0/Login/index>.

Members of the Working Group also reported on their experiences in monitoring progress towards the establishment of the System and commented on both the assessment framework and the draft mid-term review report. It was agreed that the assessment framework would be further improved for the next reporting period (ECE/CEP/AC.10/2018/2, paras. 25–39).

9. The Working Group agreed to adjust the assessment framework (ECE/CEP/AC.10/2018/5), as elaborated prior to and during its twentieth session, notably regarding the clarity of the questions, the terminology used and the scoring. It furthermore decided that the revised framework, once approved, would be used to produce a final report on progress in the establishment of the Shared Environmental Information System in Europe and Central Asia for the Ninth Environment for Europe Ministerial Conference, to be initiated at a time determined by the Committee on Environmental Policy in preparation for the Conference (ECE/CEP/AC.10/2018/2, paras. 33 and 35).

10. At its twenty-fourth session (Geneva, 29–31 January 2019), the Committee on Environmental Policy welcomed the mid-term review report on the establishment of the Shared Environmental Information System (ECE/CEP/2019/7) prepared by the Working Group. The Committee also requested the Working Group to lead a further review of progress in establishing the Shared Environmental Information System in Europe and Central Asia in advance of the next Environment for Europe Ministerial Conference (ECE/CEP/2019/2, para. 27).

11. At its twenty-first session (Geneva, 6 and 7 May 2019), the Working Group agreed to finalize the assessment framework to be used for the final review (ECE/CEP/AC.10/2019/5), including the questions to be posed, the indicators and data flows to be reviewed and the application of the chosen scoring system (ECE/CEP/AC.10/2019/2, para. 30). The Working Group also agreed that the online reporting tool would be used as the primary tool for data collection for the final review of progress. It was highlighted that the tool would need to be able to upload content from a file, such as an Excel or Portable Document Format file (ECE/CEP/AC.10/2019/2, para. 32). At its sixteenth session (Geneva, 28 and 29 October 2019), the Joint Task Force on Environmental Statistics and Indicators considered the final version of the assessment framework to be used for the final review (ECE/CEP-CES/GE.1/2019/2).

II. Data collection

12. Data collection based on the assessment framework and self-assessment questionnaire using the online tool and the analysis for the current draft final progress review report was conducted in the period between May and August 2020:

(a) The secretariat shared the self-assessment questionnaire and information for the online tool at the beginning of May 2020 and member States were invited to complete the self-assessment questionnaire by using the online tool by 22 July 2020;

(b) All questions that are scored (see assessment framework, ECE/CEP-CES/GE.1/2019/3) will be used to calculate performance scores for the final version of the report once a higher number of self-assessments is available. All open questions were mandatory as the written responses provide key inputs to the final progress review;

(c) The scoring of mandatory questions according to the seven review criteria was done automatically, using calculation formula based on the scoring system in the assessment framework that had been incorporated into the Excel workbook reporting template as well as the online tool;

(d) Based on the submitted self-assessments in the online tool, the secretariat compiled the draft final progress review report. The results of the countries that submitted their self-assessment in the Excel workbook were entered by UNEP into the online tool. All self-assessments submitted by 4 September 2020 were integrated into the draft report;

(e) Only a few countries requested clarifications concerning the completion of the questionnaire template. Several countries requested support for the online reporting tool. The secretariat and UNEP provided clarifications where needed.

13. Of the 18 countries that responded, 15 submitted results for all 9 environmental themes (thematic level questions). Three countries (Germany, Montenegro and the Republic of Moldova) did not answer the questions for some of the environmental themes.

14. The complete self-assessments submitted by the European Environment Agency members and cooperating countries revealed good results overall.

III. Indicator and national performance scores

15. The results of the self-assessments submitted by countries will be presented in the final version of the report. The fact that the current report includes an assessment of all the pillars of the Shared Environmental Information System is one of the major achievements of this review report and illustrates the progress made by countries in fully establishing the Shared Environmental Information System.
