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Item 3 of the provisional agenda

Implementing the mandate and terms of reference

Outline for the revised guidelines on environmental monitoring and reporting

Note by the Working Group

Summary

At its twenty-fifth session (Geneva, 2–3 May 2023), the Working Group on Environmental Monitoring and Assessment supported the proposal to review the 2003 publication entitled *Environmental Monitoring and Reporting: Eastern Europe, the Caucasus and Central Asia* and the guidelines contained therein and make them widely applicable. The Working Group also requested the secretariat to initiate the review process and to prepare the revised guidelines as an official publication in English, French and Russian in electronic and paper editions.

The present document aims to facilitate the Working Group's agreement on the outline and subsequent oversight of the preparation of the publication on the review of the guidelines on monitoring and reporting.



I. Background

1. The guidelines contained in the 2003 publication *Environmental Monitoring and Reporting: Eastern Europe, the Caucasus and Central Asia*¹ were developed following the establishment of the United Nations Economic Commission for Europe (ECE) Working Group on Environmental Monitoring in 2000, which was charged with providing recommendations, proposing action plans and strengthening international initiatives within the ECE region in environmental monitoring and related fields.
2. Since then, environmental monitoring has further developed, for example, due to technological advances and changes in policy objectives and environmental indicators. In addition, countries of Eastern Europe, the Caucasus and Central Asia have updated their environmental monitoring and reporting systems.
3. At its twenty-fifth session (Geneva, 2–3 May 2023), the Working Group on Environmental Monitoring and Assessment therefore discussed and agreed on the review and update of the largely outdated 2003 publication and the guidelines contained therein.²
4. The Working Group requested the secretariat to initiate the review process by setting up a drafting group and prepare the revised guidelines as an official publication in English, French and Russian in electronic and paper editions. The Working Group also agreed to make the revised guidelines widely applicable and confirmed its availability to contribute to the review process.³
5. The revision of the guidelines on environmental monitoring and reporting aims to support the implementation of the outcomes of the Ninth Environment for Europe Ministerial Conference (Nicosia, 5–7 October 2022), relating to the closure of monitoring gaps and making environmental information publicly available, findable, accessible, interoperable and reusable. In addition, the guidelines should support the collection of local and Indigenous knowledge, citizen science and crowdsourced data, as well as improving data availability, transparency and public involvement in decision-making when developing digitalization of environmental information systems relying on open data, big data and state-of-the-art digital technologies.⁴
6. Furthermore, the revised guidelines aim to support member States in reviewing their internal environmental monitoring and reporting processes, assessing their capacities and helping to identify resource needs for regular environmental monitoring and reporting.
7. The present document is intended to facilitate the Working Group's agreement on the outline, a draft of which is presented below, and subsequent preparation of the revised guidelines on environmental monitoring and reporting.

II. Draft outline

Table of contents of the revised guidelines

- I. Introduction
- II. Background, scope and objectives
 - A. Objectives and importance of environmental monitoring and reporting
 - B. Significance of data accuracy and consistency
 - C. Scope of the guidelines

¹ United Nations publication, Sales No. E.03-II-E.33.

² ECE/CEP/AC.10/2023/2, para. 69 (f).

³ Ibid. para. 69 (f)–(h).

⁴ ECE/NICOSIA.CONF/2022/L.1, para. 19.

- III. Environmental monitoring and information management
 - A. National and international regulatory frameworks
 - B. Compliance requirements and standards
 - C. Institutional roles and responsibilities
 - D. Funding for environmental monitoring and information management
 - E. Prioritization of monitoring efforts
 - F. Data sources (from direct and indirect monitoring activities)
 - 1. Monitoring methodologies and technologies
 - 2. Sampling (including sampling site selection and use of sampling protocols)
 - 3. Data collection
 - 4. Earth observation and geospatial data
 - 5. Modelling in monitoring, assessment and reporting
 - 6. Use of artificial intelligence, big data, etc.
 - 7. Citizen science, crowdsourced data and Indigenous knowledge
 - 8. Quality assurance and quality control
 - G. Data collection for environmental parameters
 - 1. Air/atmosphere
 - 2. Fresh water (surface and groundwater quality and quantity, and drinking water and bathing water quality)
 - 3. Marine and oceans
 - 4. Biodiversity and ecosystems
 - 5. Forests
 - 6. Soil (quality, contamination, erosion, etc.)
 - 7. Contaminated sites
 - 8. Climate
 - 9. Land use and cover
 - 10. Natural hazards
 - 11. Radioactivity
 - 12. Noise
 - 13. Biomonitoring
 - 14. Emissions and releases (including wastewater, chemicals and waste)
 - 15. Natural resource use, production and consumption and circular economy
 - 16. Others?
 - H. Data analysis and aggregation
 - 1. Aggregation and disaggregation
 - 2. Analysis methods and tools

- 3. Interpretation and trend analysis
- I. Data management and sharing
 - 1. Information systems and databases
 - 2. Information exchange
- J. Environmental monitoring – Fit for the future?
 - 1. Monitoring of the socioeconomic transformation and other integrated topics (sustainable development, sustainable infrastructure, green economy, environment and health, environmental disease burden, mobility and transport volume, energy transition, etc.)
 - 2. Cross-cutting issues (gender, etc.)
- IV. Environmental reporting
 - A. Overview of relevant national and international regulations governing environmental reporting
 - B. Reporting on the state of the environment
 - C. Statistical and other reporting
 - D. International reporting
 - E. Use of indicators for reporting
 - 1. Methodological approaches
 - 2. Indicator frameworks
 - 3. Use of indicators for reporting
- V. Conclusions
