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International environmental policy and governance issues

Information on the implementation of resolution 5/7 on the sound management of chemicals and waste, updating the report entitled *State of the Science of Endocrine Disrupting Chemicals 2012*[*]

Note by the secretariat

1. The annex to the present note provides an update on progress made in the implementation of the request set out in the United Nations Environment Assembly resolution 5/7, paragraph 22, to update the report titled *State of the Science of Endocrine Disrupting Chemicals 2012*. It outlines the process for developing the report, presents an overview of the overall approach, and key aspects of the report. The full report is expected to be made available during the course of 2026.

[*] The document has not been formally edited.

Annex*

Information on the implementation of resolution 5/7 on the sound management of chemicals and waste, updating the report entitled *State of the Science of Endocrine Disrupting Chemicals 2012*

I Introduction

1. In paragraph 22 of its resolution 5/7 on the sound management of chemicals and waste, the United Nations Environment Assembly of the United Nations Environment Programme (UNEP) requested the Executive Director of UNEP to, subject to the availability of resources, and in cooperation with the World Health Organization (WHO), update the report entitled *State of the Science of Endocrine Disrupting Chemicals 2012*[1]. At its 76th session, the World Health Assembly (WHA) adopted Resolution WHA76.17, requesting the Director General of WHO to work jointly with UNEP on this update. In accordance with these requests, and with financial support from the European Union, UNEP has been collaborating with WHO to update the said report. The present note provides an update on progress made.

Background

2. The International Programme on Chemicals Safety (IPCS), a joint venture of the International Labour Organization (ILO), UNEP and WHO conducted a first *Global Assessment of the State-of-the-Science of Endocrine Disruptors*[2] published in 2002. Amongst others, this assessment provided a definition of an endocrine-disrupting chemicals (EDC) as "an exogenous substance or mixture that alters function(s) of the endocrine (hormonal) system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub)populations". The assessment also highlighted extensive evidence of the adverse effects of EDCs on wildlife, while calling for more rigorous studies on their impact on humans. It called for broad, collaborative and international research initiatives, with a list of critical research needs.

3. WHO and UNEP subsequently conducted a second assessment, titled *State of the Science of Endocrine Disrupting Chemicals – 2012*[1]. This follow-up assessment focused on consolidating scientific evidence on the environmental and health effects of EDCs, as well as exposure, since the first assessment. Amongst others, it highlighted the high incidence and the increasing trends of many endocrine-related disorders in humans, such as low semen quality among many young men, genital malformations, adverse pregnancy outcomes, neuro-behavioural disorders, cancers, obesity or type 2 diabetes. It pointed to endocrine-related effects observed in wildlife populations. Finally, while noting the significant uncertainties and knowledge gaps that remain in the understanding of EDCs and their effects, the assessment also noted that exposure of humans and wildlife to EDCs was widespread and that some associations with adverse effects had become apparent.

4. In 2012, the International Conference on Chemicals Management ("the Conference") recognized EDCs as an Emerging Policy Issue under the Strategic Approach to International Chemicals Management (SAICM)[3]. The Conference recognized the potential adverse effects of EDCs on human health and the environment, as well as the need to protect humans, ecosystems and their constituent parts that are especially vulnerable. It also stressed the particular needs of developing countries and countries with economies in transition. Amongst others, the Conference decided to implement cooperative actions on endocrine-disrupting chemicals with the overall objective of increasing awareness and understanding among policymakers and other stakeholders.

[1] UNEP and WHO (2013). State of the Science of Endocrine-Disrupting Chemicals 2012. https://www.unep.org/resources/publication/state-science-endocrine-disputing-chemicals-ipcp-2012
[2] WHO (2002). Global Assessment of the State-of-the-Science of Endocrine Disruptors. https://www.who.int/publications/i/item/WHO-PSC-EDC-02.2
[3] ICCM Resolution III/2: Emerging policy issues, Part F Endocrine-disrupting chemicals, https://www.saicm.org/About/ICCM/ICCM3/tabid/5963/language/en-US/Default.aspx

5. Subsequently, responding to its commitment to the Conference, UNEP commissioned the International Panel on Chemical Pollution (IPCP) to develop three overview reports on EDCs[4]. These reports include: a review of worldwide initiatives to identify EDCs and potential EDCs; an overview of current scientific knowledge on the life cycles, environmental exposures, and environmental effects of selected EDCs and potential EDCs; and existing national, regional, and global regulatory frameworks.

6. As underscored in the UNEP 2020 Assessment Report on Issues of Concern[5], which amongst others analyzed existing regulatory instruments and voluntary measures related to EDCs, different approaches have been taken to address EDCs, with most efforts concentrated on developing infrastructure for their identification and regulation. The assessment noted some countries had established overarching strategies, and some developed or updated their laws with explicit references to EDCs. Additional actions had focused on screening, assessment and identification of EDCs. The assessment noted that as a result of these different approaches, some chemicals may be identified as EDCs and regulated by some countries but not by others. Inconsistencies across countries could hamper sound management of EDCs internationally. Hence the assessment noted that within the policy arena, strengthened dialogues and concerted actions at the national, regional and international levels could enable an effective and efficient way forward.

II. Progress in the implementation of paragraph 22 of resolution 5/7

A. Process for developing the report

7. In response to the request laid out in paragraph 22 of UNEA resolution 5/7, UNEP began engaging potential donors to support delivery of this mandate. In March 2023, a project concept note for funding by the European Union was approved by the 10th Steering Committee of the UNEP–European Commission Programme Cooperation. This was followed by the development of a full-fledged project document, which received final approval from the European Commission in October 2024. In parallel to this, UNEP and WHO initiated a process to develop the report, in close collaboration with OECD. To guide and support the work, an expert group was established following a call for expressions of interest issued in June 2024. The group initially met virtually on 4 October 2024 to discuss the proposed approach in updating the report, including a draft outline of the report.

8. Building on the draft outline of the report and inputs from the expert group, a team of chapter lead authors, each with specific areas of expertise, was brought together to guide the development of individual chapters. These lead authors then invited additional experts to serve as authors and contributing authors, providing further input to certain sections of the draft chapters.

9. The expert group was invited to review the first and second drafts of the report between 17 April and 16 May 2025 and between 28 July and 22 August 2025, respectively. Additionally, an extended consultation on the second draft of the report was conducted with a range of stakeholders with an interest in the topic of EDCs, including from international organization, governments, civil society and the private sector, both in writing and through a hybrid, consultative workshop on 2 September 2025 (Geneva and online), together with the expert group and chapter lead authors. The expert group and chapter lead authors met further on 3 and 4 September 2025 to continue their deliberations on the second draft of the report.

B. Overall approach and key aspects of the report

Scope and overall approach

10. The report assesses key scientific advancements since the 2012 assessment to inform policy- and decision-makers about EDCs. It aims to help them understand endocrine disruption and EDCs, their relevance to policy-making, and potential actions to mitigate risk. Instead of covering all new endpoints or chemicals, the report aims to provide a comprehensive overview of significant scientific advancements, focusing on key areas with the greatest potential impact on human health and the environment, including gaps and limitations, and their implications for policy and decision-making.

[4] https://www.unep.org/resources/report/overview-reports-endocrine-disrupting-chemicals-and-potential-edcs
[5] UNEP (2020). An assessment report on issues of concern: chemicals and waste issues posing risks to human health and the environment. https://wedocs.unep.org/handle/20.500.11822/33807

11. The report expands upon the areas covered in the 2012 assessment on the environmental and human health effects of EDCs. It also includes other natural and social scientific aspects relevant to the understanding, assessment and management of EDCs, such as testing and assessment methodologies, identification and substitution of EDCs, socio-economic impacts, and policy analysis of existing initiatives and actions at various levels. Additionally, it provides an analysis of gaps, challenges, opportunities, and actionable options for policy- and decision-makers.

Overview of the report in progress

12. The document will consist of 6 chapters:

(a) Chapter 1 provides a brief review of the history of EDC research and international measures, aiming to outline key definitions and background information relevant to the subsequent technical chapters, particularly for policymakers.

(b) Chapter 2 provides an update of the 2012 assessment with respect to human and animal studies relevant to the health impacts of EDC exposure. Documenting associations between EDC exposures and human and wildlife health is an essential element of ongoing EDC research. This chapter is based on reviews of (systematic) reviews as well as scoping reviews of the primary literature to provide a perspective of the state of the science. Chapter 2 is organized in terms of (adverse) health outcomes related to the functioning of the endocrine system. In addition to increasing evidence for the effects described in the 2012 assessment, a growing body of evidence indicates that EDCs can affect people and animals throughout their lives—from early development to old age—and may alter the function of the endocrine system in more ways than previously recognized.

(c) Chapter 3 provides information on current testing guidelines and assessment guidance for the purpose of identifying EDCs published by various governments and regulatory agencies, as well as assessment strategies that are available for integrating lines of evidence. This chapter shows how much of the health impacts of EDC exposure can be translated into a regulatory context towards identification of EDCs and subsequent risk management measures. In addition, this chapter identifies weaknesses in testing and assessment programs and describes significant efforts by the Organisation for Economic Co-operation and Development (OECD) and others to address those gaps.

(d) Chapter 4 provides an update on exposure to, and substitution of, EDCs since the 2012 assessment, focusing on lessons learned, human biomonitoring, and environmental monitoring, and presenting a selection of well-known EDCs as examples. This information is essential to understand the sources of exposure to EDCs and, on that basis, reduce human and wildlife exposure.

(e) Chapter 5 provides a socio-economic and policy analysis for EDCs. This chapter describes the estimation of socioeconomic costs and impacts of EDCs beyond environmental and health risks, including the methods of socioeconomic analysis and approaches to quantifying EDC-related externalities. This information is crucial to understand the costs of inaction on human and wildlife health. The chapter also provides an overview of existing policy instruments and actions on EDCs including legally binding and soft law instruments, voluntary initiatives and regulatory gaps with actionable recommendations.

(f) Chapter 6 reviews key messages from the previous chapters for policymakers and outlines key gaps and challenges towards solving the issue of EDCs.

Key advancements since the 2012 report

13. A very large body of scientific literature has been published over the past decade on the human and wildlife health effects of EDC exposure. Many of the conclusions of the 2012 assessment are strengthened by this literature, and new associations with adverse health outcomes have been found.

14. There is increasing awareness that humans and wildlife are exposed to multiple EDCs and other environmental stressors, and improved methods to evaluate these mixtures are becoming available. While controlled laboratory studies, including those using animal models, continue to be critical to understand the mode of action and health effects of EDC exposures, advancements in testing and assessment methods have facilitated identification of many chemicals as EDCs since 2012. The document also considers current testing and assessment of EDCs and the many new activities in this domain that are in-progress and that are important to both capture and provide insight into their future benefit. Efforts since the 2012 Report to identify EDCs have accelerated significantly. The issue of

socioeconomic impact is a relatively new area that provides key approach for continued focus on EDCs as an issue of concern. There is also consideration of legal frameworks enacted globally, as important elements for comparison and clarification.

15. Evidence of associations between EDC exposure and effects in humans or wildlife points to potential shortcomings of policy response measures. If environmental and health-protective regulations are operating correctly, harm to populations and the environment should be avoided. Accordingly, decision-makers should not wait for impacts to emerge before taking preventive action, as exposure risks can be reduced even in the absence of full impact data, including by avoiding or minimizing the use of chemicals with known high exposure risks.

Next steps

16. The final EDC report is expected to be made available during the course of 2026, ahead of the first International Conference of the Global Framework on Chemicals, with the aim to amongst others inform discussions on the fate of EDCs as an issue of concern in the context of the Framework. In line with UNEA resolution 5/7, it will also be made available to the UN Environment Assembly at its eight meeting for its consideration.