
An Assessment Report on Issues of Concern: Chemicals and Waste Issues Posing Risks to Human Health and the Environment

Executive Summary

September 2020



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Feedback and contact

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Many countries and regions have set up regulatory and policy frameworks to achieve sound chemicals and waste management. In addition to national and regional efforts, the international community has taken concerted joint actions to address specific issues of concern, including chemicals that can be transported over long distances by wind and water, are transported through global trade in resources, products and waste, or are used or are present in many countries.

Substantial progress has been made by the international community, including establishment of several multilateral environmental agreements (MEAs) and international initiatives. However, as assessed by the Global Chemicals Outlook II (GCO-II), the global goal of sound chemicals and waste management in ways that lead to minimised adverse effects on human health and the environment has not been achieved by 2020. Ambitious international action is urgently required to ensure reaching these goals in the foreseeable future.

This report responds to Resolution 4/8 by the United Nations Environment Assembly (UNEA) and aims to inform the international community about the current situation of specific issues of concern, based on a review of evidence published within the past decade. It is meant to inform and support decision making at UNEA and other international forums working towards sound chemicals and waste management.

After introduction and methods chapters, Chapter 3 assesses the eight emerging policy issues and issues of concern (for simplicity, hereafter both are referred to as “issues of concern”) identified by the International Conference on Chemicals Management (ICCM) under

the Strategic Approach to International Chemicals Management (SAICM). It reviews how current regulatory and policy frameworks address them by specific instruments and actions, building on GCO-II findings and highlighting challenges and opportunities.

Chapter 4 addresses the 11 issues with emerging evidence of risks identified by GCO-II. It assesses current exposure as well as instruments and actions under current regulatory and policy frameworks, highlighting challenges and opportunities. It also provides background information on environmental or human health effects of the issues based on existing assessments by national governments and intergovernmental institutions, to raise awareness among governments and stakeholders.

Chapter 5 presents a “thought starter” on identification of issues of concern, including a review of existing approaches, a map of other current relevant initiatives, and considerations of potential areas in which future issues of concern might be identified and possible identification processes.

Chapter 6 provides an overarching outlook for future international work on issues of concern.

Progress has been made under SAICM, but not enough

To date, eight issues of concern have been identified under SAICM: chemicals in products (CiP), endocrine disrupting chemicals (EDCs), environmentally persistent pharmaceutical pollutants (EPPPs), hazardous substances in the life cycle of electrical and electronic products (HSLEEP), highly hazardous pesticides (HHPs), lead in paint, nanotechnology and manufactured nanomaterials (Nanomaterials), and per- and polyfluoroalkyl substances (PFASs). Overall, most of these issues have received recognition from policymakers and stakeholders, with many instruments developed and actions taken. However, these instruments and actions are as yet inadequate to solve these issues at a global scale.

For long-standing issues (e.g. lead in paint, HHPs), progress has been uneven across countries and regions. The issues may have been addressed in many developed countries and therefore have less urgency as issues of concern there. Developing and transition countries might use some of the many instruments and actions established and taken by governments and stakeholders in developed countries; however, actions in developing and transition countries are limited due to their specific circumstances and conditions, such as lack of awareness, capacity and financial resources, among other factors.

For more recently recognized issues, limited actions have been taken locally, regionally and globally, resulting in success in addressing some aspects of the issues in some parts of the world. This success is only partial, largely due to gaps in the scopes of existing instruments and actions. For example, for EPPPs, HSLEEP and PFASs, partial coverage of life-cycle stages, relevant chemicals and uses are addressed. Also, existing instruments and actions have

limitations in terms of what they can address: while efforts have been considerable, for example, in developing guidance and tools for testing, assessment, and identification of EDCs, a limited number of chemicals have been tested, identified, and regulated as EDCs in this arena.

An overarching challenge (as well as an opportunity) is how to communicate and scale up existing instruments and lessons learned in one region or sector to others, particularly for developing and transition countries. Detailed challenges and opportunities for individual issues are summarized below.

CiP	(1) Foster communication of chemicals present in products throughout the supply chain, versus the current common practice of communicating what should not be present. (2) Extend CiP communication to actors outside supply chains, e.g., by exploring instruments such as fiscal policies, extended producer responsibility, corporate sustainability reporting, and new public-private partnerships. (3) Ensure CiP information is relevant, accurate, current and accessible through strong regulatory and voluntary actions on effective monitoring and enforcement.
EDCs	(1) Regularly synthesize and disseminate relevant scientific evidence in a policy-ready format to bring governments and stakeholders worldwide to the same level of awareness and knowledge. (2) Strengthen dialogues and concerted actions at all levels to enable an effective and efficient way forward, including advancement and implementation of, for example, standard data requirements and testing methods, mutual acceptance of data and existing assessments, joint assessments and joint strategies for addressing EDCs.
EPPPs	(1) Expand the current scope under SAICM to encompass all pharmaceutical pollutants, including those that may not be long-lasting but may still accumulate in the environment due to continuous use and releases, and those that may lead to outcomes that are not readily reversible, such as antimicrobial resistance. (2) Step up global efforts to prevent pharmaceutical pollutants from entering waste streams, including strengthened engagement with pharmaceutical manufacturers, and filling in knowledge gaps of existing pharmaceuticals.
HSLEEP	(1) Address the early life-cycle stages of EEP, e.g., by taking proactive approaches such as adopting applicable fiscal policies and design guidelines to foster development of EEP made with minimal use of hazardous substances and by green manufacturing processes. (2) Properly address the situation of informal workers who handle EEP waste through improved understanding of their role and impacts on their health, best practices, and other conditions.
HHPs	(1) Address the current ambiguity of the criteria for identifying HHPs. (2) Strengthen international support for developing and transition countries, possibly through legally binding instruments and partnerships, including building up resources and capacities to establish and enforce national pesticide legislation, combatting illegal trafficking of illicit pesticides, and treatment of existing stockpiles.
Lead in paint	Continue global efforts in phasing out lead paints, including upscaling technical assistance in establishing legal limits, evaluation and improvement of the effectiveness of control measures, addressing lead pigments trade, fostering effective monitoring and enforcement, and exploring novel approaches to voluntary actions, while taking into account the specific circumstances and conditions in developing and transition countries.
Nanomaterials	(1) Establish regulatory data requirements on nanomaterials around the world, taking into account their properties and life cycles, to inform future hazard and risk assessments of them. (2) Strengthen dialogues and concerted actions at the international level to work towards common definitions and grouping strategies for nanomaterials.
PFASs	(1) Accelerate the global phase-out of those PFASs listed under the Stockholm Convention on Persistent Organic Pollutants. (2) Explore novel approaches to managing PFASs (e.g. grouping by similarities, the “essential use” concept in the Montreal Protocol). (3) Foster regular information exchange and joint efforts to accelerate actions on PFASs that are not listed under the Stockholm Convention, including transition to safer alternatives.

The issues identified by GCO-II warrant urgent international concerted actions

GCO-II identified 11 chemicals or groups of chemicals where emerging evidence indicates a risk. Environmental and human health effects are not a part of the assessment in this report; however, as noted in the report, a compilation of existing assessments by national governments and intergovernmental institutions confirms their possible significant adverse effects on the environment and humans. In addition, the assessment of current exposure to these substances, as well as existing instruments and actions, suggests pressing needs for international concerted action for all of them.

	Persistence in the environment?	Long-range transport potential?	Global prevalence of current exposure (and trends)?	Major sources being addressed globally?
Arsenic	✓	✓ (emissions from high-temperature processes)	✓	✗
Bisphenol A	✗	✗	✓ (↗ in adults)	✗
Cadmium	✓	✓ (emissions from high-temperature processes)	✓ (↘ in some regions, ↗ in others)	✗
Glyphosate	✓ (up to months to years in soil & sea water)	✓ (land-to-sea transport)	✓	✗
Lead	✓	✓ (emissions from high-temperature processes)	✓ (↗ as shown by global burden of disease data)	✗
Microplastics	✓	✓	✓	✗
Neonicotinoids	✓ (up to months to years in soil & sediment)	✗	✓	✗
Organotins	✓	✓ (some organotins)	✓	✗
Phthalates	✗	✗	✓	✗
PAHs	✓	✓	✓	✗
Triclosan	✗	✗	✓	✗

Overall, limited attention has been paid or actions taken for these issues, with uneven progress across countries and regions, although as with the issues of concern under SAICM, many of the issues identified by GCO-II have long been recognised (for over a century for lead, for example). Also, when instruments are established and actions taken, their scopes often are not comprehensive; for example, major sources of a substance may not

be covered in their entirety by existing instruments and actions. In the case of microplastics, actions have been taken to limit their use in cosmetics and personal care products, but instruments and actions addressing other major uses, which may result in additional and even more significant environmental releases, are limited.

Furthermore, substitution has often not been properly tackled when addressing these issues, with known toxic materials used as substitutes for those that are of concern. For example, lead used as a PVC stabiliser was first replaced by cadmium, which was then largely replaced by organotins – despite extensive knowledge about the high toxicity of both cadmium and organotins. Opportunities for addressing individual issues are identified and may be considered for future concerted actions (see below).

A thought starter on identification of issues of concern

In the future, it may be appropriate to address a wider range of issues of concern that have previously received insufficient attention, rather than specific hazardous chemicals or groups of chemicals. This includes issues where sound management of chemicals and waste is necessary to achieve greater sustainability and to achieve wider environmental or development objectives, particularly for climate change or biodiversity and for various Sustainable Development Goals (SDGs).

In addition to the various mechanisms used to identify issues of concern, such as tracking national regulatory actions, other methods could be introduced, such as seeking nominations by countries and other stakeholders. A case may also be made for horizon scanning and early warning mechanisms; discussions on strengthening the science-policy interface will be relevant to how this could be achieved.

When selecting issues, it will be important to focus on a manageable number at any one time where coordinated international action can have the greatest impact. One relevant international forum for addressing issues of concern will be the future instrument for the sound management of chemicals and waste beyond 2020, now being discussed by governments and stakeholders, and in particular how issues of concern should be identified within that process. It is also important to note here the linkages to discussions on the science-policy interface that UNEA-5 might have.

Outlook for future development

No one-size-fits-all solution can tackle all the challenges and opportunities of addressing the issues documented in this report and elsewhere. Nevertheless, an overarching enabling environment established by concerted international action could help countries and

stakeholders address both the issues addressed in this report and future issues of concern. Elements could include (1) strengthened leadership with clear roles and responsibilities to coordinate concerted actions, (2) regular monitoring and evaluation of progress, (3) new mechanisms, including legally binding ones, by the international community to raise its efforts on addressing issues where progress has been limited, (4) active knowledge management, including knowledge capture, synthesis and sharing, and (5) strengthened involvement of the scientific community.

This report highlights a continued need to address the eight issues under SAICM by the international community; properly addressing them can also contribute to solutions of many issues identified by GCO-II. This report also highlights that several issues identified by GCO-II warrant further consideration by the international community: for example, PAHs (polycyclic aromatic hydrocarbons) could be taken up by the Stockholm Convention, as they are already regarded as POPs under the Convention on Long-Range Transboundary Air Pollution. For arsenic, cadmium and lead, many sources of these elements are the same or similar to those of mercury. Hence, the Minamata Convention on Mercury provides a good model, and linkages and synergies might be investigated to inform best ways to address these related elements internationally.

Considering that resources for the international community and many countries are limited, addressing individual issues of concern may not be sensible. New ways for addressing many of them in an integrated and holistic manner may be explored, including using a sector-specific value chain approach, grouping substances by similar intrinsic properties, or taking into account all life-cycle stages of specific chemicals and products. Also, efforts on sound chemicals and waste management should be integrated with other environmental and societal priorities (e.g. climate, biodiversity, human rights, labour standards).

Chemicals have brought many benefits to modern life, but often at high costs to the environment and human well-being. It is time for the international community to draw on lessons learned from past successes and failures, and together drive a transformative change of our global society for a sustainable future.

