

## Info Sheet 2

\*This document has not been formally edited

### Challenges that may be specific to the chemicals, waste and pollution area

*This info sheet was informed by:*

- [Assessment of options for strengthening the science-policy interface at the international level for the sound management of chemicals and waste](#) pp 17-21 (UNEP Chemicals 2020).
- [The Global Waste Management Outlook](#) (UNEP 2015)
- [Implementation plan "Towards a Pollution-Free Planet"](#) (UNEP 2018)

The issue area of chemicals, waste and pollution may present specific challenges that may be less familiar to some OEWG participants, including:

- The breadth of the scientific knowledge/information to be assessed. For example, a study (published in 2020 in Environmental Science and Technology) of 22 chemical inventories from 19 countries and regions found that “over 350,000 chemicals and mixtures of chemicals have been registered for production and use, up to three times as many as previously estimated” (Wang et al. 2020).
- The extent to which information on chemicals and their properties remain publicly unknown, leading to information asymmetries among experts contributing to the science-policy interface. The same 2020 study cited above notes “the identities of the many chemicals remain publicly unknown because they are claimed as confidential (over 50,000) or ambiguously described (up to 70,000)” (Wang et al. 2020).
- The financial implications for private sector actors of sharing proprietary knowledge. The broad variation in the ways in which concerns about potential conflicts of interest are managed in this issue area, which may reflect competing norms. In 6(f), UNEA resolution 5/8 provides for taking into account the need for the panel to address potential conflicts of interest and safeguard commercially sensitive information.
- Technical challenges and expenses of the detection and identification of specific chemicals (in the environment, in products, in humans, in waste flows) and in tracking of waste flows.
- The need for informing anticipatory governance arrangements in circumstances where the impacts of exposure to a chemical or class of chemical may not be known for several generations.
- The importance of local, practical knowledge, especially in terms of understanding the ways in which products and processes governed under this arena may not be deployed or used as intended or may be influenced by different climatic contexts.
- The stark differences in approaches that can arise between countries that turn to risk-based chemicals management as opposed to those relying on hazard-based chemicals management (Geiser 2015).
- The difficulty of visually communicating the impact of substances that may exhibit one or more of the following characteristics: invisibility of the substance and cocktail or mixtures and of its/their effects; occurrence at very low concentrations; impacts to human health and the environment through

complex pathways; no or incomplete information on the extent of production, use and release; effects that are subtle and may only appear at population levels; and enduring gaps in our understanding of the processes through which chemicals and waste impact human health and the environment. There are some issue areas that have started to facilitate powerful visual depictions in this arena, notably the questions of plastic pollution and of e-waste flows.

- Absence of measurement and of standard methodologies for measurement of waste. The weighing of wastes is both relatively recent and still not universally practised. Waste composition data are even more uncertain as measurement tends to be occasional and not carried out on a comprehensive or consistent basis.
- Difficulties inherent in estimating the size of the problem of uncontrolled waste since it is by definition “unmanaged”. Measurement and assessment tend to be limited to the official or formal waste management system. Activities outside of that system, including uncontrolled (and often illegal) dumping or burning, as well as recycling by the informal sector, are neither measured nor reported.
- Resistance to moving fundamental thinking away from ‘waste disposal’ to ‘waste management’ and from ‘waste’ to ‘resources’. Updated terminology emphasizes a ‘circular economy’ in which ‘waste and resource management’ is one of the approaches to achieving sustainable consumption and production.
- Proposed reformulation: Essential role and attention needed on chemicals, waste and pollution in moving towards a more circular economy, in which products and materials are designed in such a way that they can be reused, remanufactured, recycled or recovered and thus maintained in the economy for as long as possible, along with the resources of which they are made, and in which the generation of waste, especially hazardous waste, is avoided or minimised to contribute significantly to sustainable consumption and production.
- Some forms of pollution are highly localized, whereas others are diffuse and transboundary.
- Solutions that address pollution in one medium may risk shifting the problem to another medium (for example scrubbers to address air pollution may then require a solid waste management strategy to avoid land or water pollution).
- Countries frequently struggle to identify pollution priorities, according to a World Bank report. Preventive action on chemicals, waste and on pollution could save lives, reduce the burden on the health system and health costs and enhance worker productivity. A privileged collaboration between the environment and health communities and other sectors could be further enhanced, at all levels.

**Additional resources:**

United Nations Environment Programme (2019). *Global Chemicals Outlook II: From Legacies to Innovative Solutions - Implementing the 2030 Agenda for Sustainable Development*. <https://wedocs.unep.org/bitstream/handle/20.500.11822/28113/GCOII.pdf?sequence=1&isAllowed=y>

United Nations Environment Programme (2020). *An Assessment Report on Issues of Concern:*

*Chemicals and Waste Issues Posing Risks to Human Health and the Environment.*  
<https://wedocs.unep.org/bitstream/handle/20.500.11822/33807/ARIC.pdf?sequence=1&isAllowed=y>

Geiser, K. (2015). *Chemicals without Harm: Policies for a Sustainable World*. MIT Press.  
<http://dx.doi.org/10.7551/mitpress/9780262012522.001.0001>

Wang, Z., Walker, G.W., Muir, D.C. and Nagatani-Yoshida, K. (2020). "Toward a global understanding of chemical pollution: a first comprehensive analysis of national and regional chemical inventories". *Environmental Science & Technology* 54(5), 2575-2584. <https://dx.doi.org/10.1021/acs.est.9b06379>.

Independent Evaluation Group (2017), *Toward a Clean World for All: An Evaluation of the World Bank Group's Support to Pollution Management*, International Bank for Reconstruction and Development/World Bank.