

2.0. OEWG Science-Policy Panel to Contribute Further to the Sound Management of Chemicals, Waste, and Pollution Prevention

Accredited Major Group Stakeholder Statement

Society of Environmental Toxicology and Chemistry (SETAC)

Background

SETAC is a professional scientific society and is a UNEP accredited Scientific and Technical Community Major Group stakeholder. SETAC is very concerned with the global threat that poorly managed chemicals and waste pose to human and ecological health. We firmly believe that our mission to advance environmental science and management and our principles of multidisciplinary approaches, sectoral balance, and science-based objectivity, as well as our global network of environmental experts, make SETAC especially suited to partner in any endeavour when the shared goals are to better understand and improve our environment.

As such, SETAC was delighted with the adoption of resolution 5/8 at UNEA 5.2. Following that decision, SETAC established an advisory panel on chemicals management (SETAC Chem Panel) to coordinate SETAC's contributions to the policy dialogue at UNEP and the Open Ended Working Group (OEWG) for the establishment of a science-policy panel to contribute further to the sound management of chemicals and waste and to prevent pollution (SPP CWP). The members of the SETAC Chem Panel are appointed by the SETAC World Council, guided by the SETAC principles and ensuring sectoral balance, interdisciplinarity, and focus on science-based objectivity.

Statement prepared by the SETAC Chem Panel

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[The Society of Environmental Toxicology and Chemistry \(SETAC\)](#) is a global scientific organization. SETAC would like to thank UNEP for the opportunity to attend the 2.0 Open Ended Working Group (OEWG) for the establishment of a science-policy panel to contribute further to the sound management of chemicals and waste and to prevent pollution (SPP CWP), and to offer our scientific expertise to support the OEWG activities. SETAC's work, in relation to science-policy activities, has clearly demonstrated that multidisciplinary, multistakeholder working groups, consistent with [SETAC principles and values](#), are a robust way to tackle global challenges, in [collaboration](#) with other organizations.

SETAC Recommendations

Based on SETAC's experience advancing solutions to environmental challenges, SETAC recommendations to the OEWG are:

Global Issues Have Local Impacts and Solutions

SETAC considers a global perspective to be important, but without losing sight of the specific issues that might have highly significant local impacts. Additionally, impacts at the local or regional level need to be considered as both chemical exposure and effects may differ significantly between highly developed, well-resourced regions and less-developed and under-resourced regions. Consequently, it is key to consider the intended impact early in the process to allocate (or find) resources, for tangible actions in the assessments to be implemented. SETAC has a vast global network across various geographical regions and can support at both the local and worldwide level.

Capacity Building Needs

SETAC considers capacity building that is tailored to regional needs to be of critical importance for the effective assessment and management of environmental chemicals and the protection of people and biodiversity. SETAC would be honored to use its global framework of scientific meetings, workshops, horizon scanning, training courses, certification program ([IBERA](#)), and other engagement activities to help the SPP CWP to build capacity and to make a difference globally.

Prioritization Must be Transparent and Based on Scientific Evidence

Topics that the panel will address should be prioritized based on criteria that must be clear, based on science, and applied consistently, using a transparent framework, to all potentially relevant topics and value chains, in the space of chemicals, waste, and pollution. The framework and its criteria should be set during the inter-sessional period, and they should be agreed upon by the OEWG. The key factors that need to be considered in a priority setting framework should be guided by the objectives of the chemicals, waste, and prevention of pollution science-policy interface. SETAC is pleased to present an outline of a conceptual priority setting framework that is currently being developed by SETAC CheM Panel.

SETAC's Conceptual Priority Setting Framework

Given the range of potential issues that may be considered when prioritizing chemical management, a multi-criteria analysis approach is appropriate to provide the holistic considerations and the flexibility required for prioritization of the work scope. The implications for human health and the environment are outcomes of an assessment of impact and risk. This must be guided by a risk assessment process that is inclusive of the consideration of persistence, toxicity, exposure, spatial scales, implications for economic and social values, and others.

SETAC's CheM Panel's conceptual priority setting framework for chemical management (Figure 1) builds upon the drivers, pressures, state, impact, and response model of intervention (DPSIR) that has been used to organize strategies for reporting on environmental issues. This concept identifies its critical elements used to describe the interactions between society and the environment. The indicators are categorized into 'drivers' that put 'pressures'

in the 'state' of the system, which in turn results in certain 'impacts' that will lead to various 'responses' to maintain or recover the system under consideration. It is followed by the organization of available data, and the suggestion of procedures to collect missing data for future analysis.

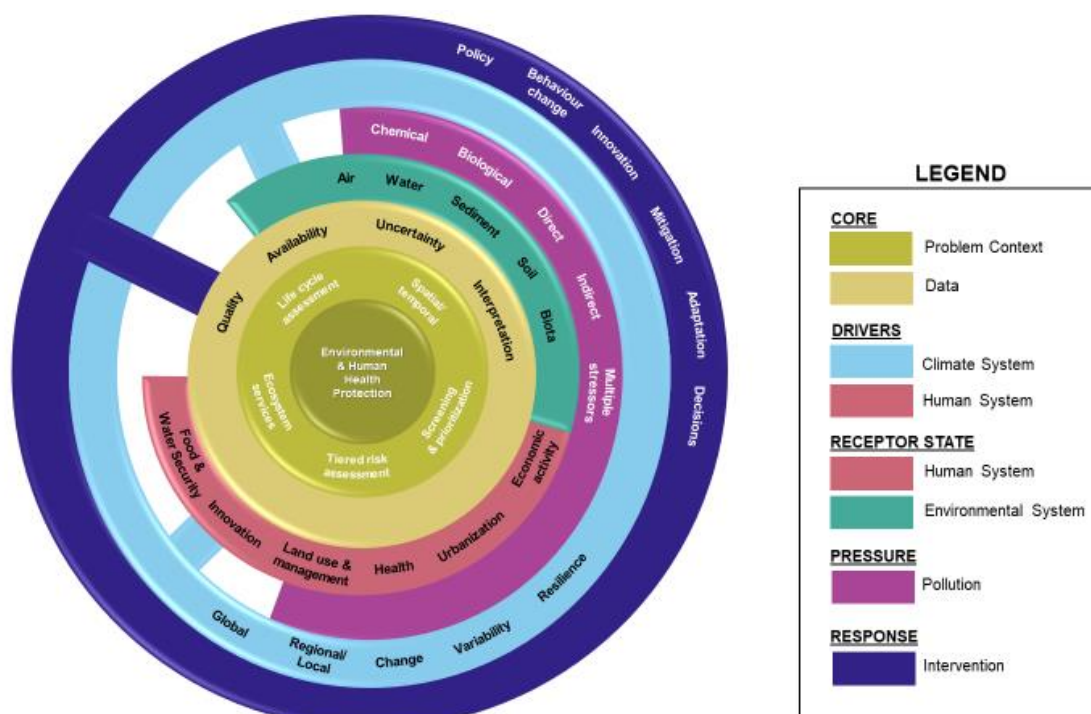


Figure 1. Conceptual priority setting framework for chemical management (under development by the SETAC Chem Panel)

The rings of Figure 1 illustrate the connectivity between each of the elements. At the centre of a multi-criteria analysis approach is the core goal of environmental and human health protection within a One Health approach ([WHO, 2022](#)). Elements that touch each other demonstrate direct connectivity via the rings as well as the spokes. Each of the elements is explored in additional detail below.

1. Core – this represents the overall protection goal.
 - a. A problem context would be established based on a set of supporting tools: an alternatives assessment, a tiered risk assessment, screening, and prioritization, spatial or temporal assessments, life cycle assessments and ecosystem services.
 - b. The data to address the problem context will need to be assessed for their availability, reliability, quality, and interpretation.
 - c. The impact is represented within the core, such that the data can be used to frame the problem and characterize and quantify impacts.
2. Drivers
 - a. The climate system driven by global, regional or local change, variability, and resilience.
 - b. The human system driven by economic and social values related to innovations for human betterment and improvement.

3. Receptor States
 - a. State of the environmental system (soil, water, sediment, air, and biota).
 - b. State of the human system, including sustainable development goals.
4. Pressure – whether chemical, physical, biological, indirect, or a combination of multiple concurrent stressors and whether these remain persistent.
5. A response would require intervention in the form of policy development, aligned decision makers, behavioural change, innovation, adaptation, and mitigation.

Based on the conceptual model and DSPIR framework, and SETAC CheM Panel's experience, we consider the following factors critical for a successful prioritization framework:

- **Risk**, based on an exposure and effects assessment, should be the centerpiece of any prioritization framework and should be assessed against the goal of protecting human health and the environment.
 - Holistic consideration of health and environmental aspects should be given including direct and indirect impacts to human (health, societies, food and water securities, economies) and environmental (biota, ecosystems, climate, biodiversity, services) systems and their geopolitical and socioeconomic interdependencies.
 - The exposure assessment should include source apportionment covering point, diffuse, and natural sources of chemicals, and their resulting concentrations, behaviors, and sinks.
 - The effects assessment should be holistic in its scope by incorporating the assessment of direct and indirect impacts to the environment, human health, and cultural and socioeconomic aspects.
- **Spatial and temporal trends** in sources, pathways, bioavailability modifiers, receptors and effects (including mixtures or multiple stressor interactions) affect current and projected risk.
- **Progress enablers**, including policies, multilateral agreements, chemical inventories, data tracking and reporting, data repositories and accessibility, and state of knowledge reviews, may accelerate outcomes and ensure the process value-adds rather than duplicates.
- **Implications for economic and social values**, including the economic and societal (including indigenous and archeological values) costs of action and inaction, could be addressed within an assessment of risk, or may be assessed in a comparative assessment of potential responses.
- **Data, uncertainty, and their interpretation** are critical to a multicriteria assessment. A balance between data and uncertainty is needed to quantify both the sources of uncertainty and variability that might influence risk. Additionally, consideration for how to manage the absence of information will be important to ensuring emerging threats are not missed.

The following tools may support the SPP CWP to prioritize elements of the work program:

Alternatives assessment that compares chemical and non-chemical alternatives to processes and products can be highly useful when prioritizing issues.

Tiered-risk assessments guided by simplified and conservative assumptions at low tiers and supported by sensitivity and uncertainty analysis to screen and prioritize next steps towards guiding the decision-making process.

Screening tools will be critical for prioritization particularly of new chemicals and chemicals of emerging concern. Screening tools may fit within a tiered-risk assessment framework and can include new assessment methodologies such as *in silico* structure-activity relationships or existing frameworks such as outlined in Annex D of the Stockholm Convention, whereby a candidate chemical is assessed against persistence, long-range transport, and bioaccumulation criteria as a preliminary evaluation.

Life Cycle Analyses (LCA) and Life Cycle Impact Assessment (LCIA) provide existing frameworks that may be used to screen by looking at the full life cycle of chemical production through the persistence in the environment. SETAC has a long history supporting those approaches and in fact co-founded the Life Cycle Initiatives with UNEP.

References

WHO Regional Office for Europe (2022). A health perspective on the role of the environment in One Health. WHO/EURO:2022-5290-45054-64214.

<https://www.who.int/europe/publications/i/item/WHO-EURO-2022-5290-45054-64214>