



# From Science to Action under the Basel, Rotterdam and Stockholm conventions

## “From Science to Action” – Why is it important?

The resolution adopted at the fifth session of the United Nations Environment Assembly (UNEA-5) held in March 2022 to establish a **science-policy panel (SPP)** to support action on chemicals, waste and pollution (UNEP/EA.5/Res.8) reflects global concerns about the impact of pollution on human health and the environment. These concerns are shared by the Basel, Rotterdam and Stockholm (BRS) conventions, which share the common objective of protecting human health and the environment from hazardous chemicals and waste.

**Chemical pollution and waste generation** are increasing at exponential rates, with an estimated 350,000 synthetic chemicals currently registered for production and use around the world (Wang et al. 2020). The individual and collective impact of pollution related to these chemicals, many of which persist in the environment for many years, is significant and yet frequently less publicly salient than other major environmental challenges, including climate change and biodiversity loss.

One recent analysis indicates that growth in “synthetic chemical production and diversification, particularly within the developing world, outpaced these other agents of global change” (Bernhardt et al. 2017). Another set of experts warns that “anthropogenic chemical pollution has the potential to pose one of the largest environmental threats to humanity” (Naidu et al. 2021).

UNEP has also acknowledged the urgency of addressing pollution, characterizing the interconnected threats posed by

pollution and waste, nature and biodiversity loss, and climate change as a “triple planetary crisis” driven by unsustainable consumption and production.

The BRS conventions are three of the primary multilateral environmental agreements (MEAs) for coordinated global action to address the impacts of chemical and waste pollution on human health and the environment. Each of these legally binding treaties is designed to address a different facet of the production, use and disposal of chemicals of global concern, with the aim of protecting human health and the environment from the impacts of exposure to chemical and waste pollution.

**Science is a core component** of each of these multilateral environmental agreements, informing technical experts’, policymakers’ and other stakeholders’ evaluation of problems, formulation of recommendations and policy responses, and supporting implementation by Parties and other stakeholders at the regional and national levels.

The BRS conventions have been working at the interface of science and policy since their establishment, meeting new challenges and emerging trends in their respective areas of responsibility for management of chemicals and waste.

Each of these conventions is structured to ensure that science plays a significant role in policymaking; as such, stakeholders can draw lessons from the successes and challenges that Parties, technical experts, and diverse stakeholders have dealt with as they have worked to fulfill the objectives of each of these conventions.



Secretariat of the Basel, Rotterdam and Stockholm Conventions

11-13, Chemin des Anémones

1219 Châtelaine, Switzerland

Tel: +41 22 917 8271

Email: [brs@un.org](mailto:brs@un.org)

Website: [www.brsmeas.org](http://www.brsmeas.org)



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## Strengthening the science-policy interface for sound management of chemicals and waste

Several lessons for designing a science-policy panel (SPP) can be gleaned from the years of experience of the BRS conventions in analyzing and responding to complex challenges posed by chemical and waste pollution. Key elements to consider when designing an SPP could include:

- **Sources of knowledge and data:** In order to achieve holistic understanding of the physical, economic, and social aspects of pollution, the SPP could gather and evaluate quantitative and qualitative data from across the natural and social sciences. The SPP could reflect a range of disciplinary expertise, including both the natural and social sciences;
- **Participation:** The work of the BRS conventions has benefited from the engagement and input of individuals with different areas of expertise and experience and key stakeholders from the private sector and civil society. The SPP could facilitate participation of a wide range of stakeholders, e.g., policymakers, academic researchers, chemicals managers, producers and users of substances and representatives of communities affected by pollution;
- **Enhancing access to essential data:** Proprietary knowledge about the composition of synthetic chemicals is a significant obstacle to effective management of the risks posed by production, use and disposal of hazardous substances. The SPP could identify ways to facilitate information sharing to enable sound management of chemicals and waste;

- **Identifying and signaling potential trends and hazards:** A critical area of added value to global management of chemicals and waste could be the identification of trends and potential challenges. The SPP could undertake horizon-scanning work that can inform existing mechanisms for addressing pollution on the global, regional, national and local levels.



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## Strengthening science-based decision-making at the national level

Strong science-policy interfaces can raise awareness of critical issues and possible policy responses, build networks among stakeholders, and facilitate cooperation and information exchange among key actors working across sectors and scales. Wang et al. (2019) also find that, among other benefits, science-policy interfaces can build confidence in science-based action and foster commitment to action.

Effective management of chemicals and waste will require systematic engagement with the policymakers who are responsible for designing and implementing policies, procedures, and other actions to tackle these multifaceted challenges.

While effective national engagement is critical across all contexts, it is particularly important for governments and stakeholders in developing countries, which are disproportionately affected by pollution. Attention to the barriers to access and full participation that are common across developing countries will be a critical part of establishing a strong and effective science-policy panel.

The “From Science to Action” initiative has yielded valuable insights into the challenges that need to be addressed to enhance science-based action to support implementation of the BRS conventions, such as the following:

- Essential data related to local and national environments are often difficult to access or entirely unavailable, making implementation of effective policy very difficult;
- Capacity to generate data at the national level as well as access to data is severely limited in many countries due to inadequate research facilities and infrastructure;
- Capacity for institutional data generation and management should be strengthened at the national level;
- Enabling environments should be created for publication of research;
- Industry should be incentivized to invest in scientific research;
- Methods of communicating information to policymakers should be improved through training activities.



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