

THE INTERNATIONAL PANEL ON CHEMICAL POLLUTION (IPCP): BACKGROUND AND PERSPECTIVES

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Abstract

The initiative to establish an International Panel on Chemical Pollution (IPCP), which was started at the 2006 Dioxin Conference in Oslo, is presented. We summarize the objectives of the IPCP and the recent development of this global network of scientists that is intended to deal with chemical pollution problems of international relevance. We discuss the organizational structure and the tasks of the IPCP as well as its relationship to various other institutions such as scientific societies, UN institutions, and national governments. The paper is intended to serve as a starting point for a broader discussion of next steps in the development of the IPCP.

Introduction

Chemical pollution will remain an important issue in the 21st century in many parts of the world. There are tens of thousands of chemicals on the market for which risks to humans and the environment have not yet been evaluated. Chemicals are released to the environment and to food, drinking water, and indoor air from many applications. Examples are flame retardants, surfactants, pharmaceuticals, plastic softeners, pesticides, industrial chemicals, heavy metals, and unintentional by-products. Even chemicals that have already been banned under the Stockholm Convention on Persistent Organic Pollutants continue to enter the environment. These problems transcend the boundaries of individual countries and require international action. The need for international action was recognized already several decades ago when first international conventions such as the Geneva Convention on Long-Range Transboundary Air Pollution (LRTAP) was established. Other examples are the more recent protocols to the LRTAP Convention such as the Aarhus Protocols on heavy metals and persistent organic pollutants (POPs)¹, the Stockholm Convention (POPs)², the Basel Convention (hazardous waste)³ and the Rotterdam Convention (prior informed consent procedure for chemicals in international trade)⁴. However, often the available scientific knowledge does not provide a sufficient basis for the work under these international agreements. Therefore, it is necessary to review and summarize existing scientific knowledge, to characterize uncertainties and identify knowledge gaps, and to initiate new research in priority areas. Thereby, the basis for decision-making processes in politics can be improved. This is, for example, the objective of the Arctic Monitoring and Assessment Programme (AMAP)⁵. However, the scope of AMAP is limited to the eight Arctic countries. In addition to the contamination of the Arctic, there are other large-scale contamination problems occurring in different parts of the world, e.g. the release of POP-type chemicals from urban areas, and also for these problems, the transfer of scientific information to decision makers and the public is needed. The objective of the International Panel on Chemical Pollution, IPCP, is to address this need. In addition, the IPCP is intended to create awareness of pollution problems among politicians and in the public. In other words, the objectives of the IPCP are to improve the science-politics interface in the field of chemical pollution in both directions, from science to politics and vice versa. The initiative to establish the IPCP was started in 2006⁶. Here we describe the current status of the IPCP initiative, discuss the tasks and organizational structure of the IPCP as well as its relationship to existing institutions, and give an outlook on the planned next steps in the development of the IPCP.

Current Status of the IPCP Initiative

At the Dioxin Conference in 2004 in Berlin, Martin Scheringer proposed that, in analogy to the Intergovernmental Panel on Climate Change (IPCC)⁷, an IPCP could be established to improve the science-politics interface in the field of large-scale chemical pollution⁸. This proposal was further discussed at the Dioxin 2006 Conference in Oslo with statements from Heidelore Fiedler (UNEP Chemicals), Noriyuki Suzuki (National Institute for Environmental Studies, Japan), Ivan Holoubek (Masaryk University, Brno, Czech Republic), Cornelius Zetzsch (Bayreuth University, Germany), and Åke Bergman (Stockholm University, Sweden). The objectives of the IPCP have been summarized in a declaration that is open for signature to all interested scientists. The declaration and the list of signatures is available from the IPCP web site (www.ipcp.ch); the list remains open for additional signatures. The IPCP is organized as a global network of scientists from various fields dealing with aspects of chemical pollution: chemistry, biology and toxicology, engineering sciences, epidemiology, medicine, and others. The primary objective of this network of scientists is to review the state-of-the-science, determine the degree of consensus on certain issues, and discuss possible implications for policy makers. This is somewhat different from the discussion of agreement and disagreement between science, industry, and authorities; results from the IPCP work may serve as input for this latter discussion. Compared to the IPCC, which was established as an organization whose members are countries, the structure of the IPCP can be seen as a “bottom-up” approach. This is also the reason why the IPCP is called an *International Panel*.

Tasks, Partners and Organization of the IPCP

Existing scientific knowledge about the emissions, the environmental fate and transport, the toxic and ecotoxic effects, and the epidemiologically observed impacts of chemicals is often fragmented and incomplete. Many results are fraught with high uncertainties, which seriously impedes science-based decision making. Moreover, there are many aspects that have not yet been investigated at all. Finally, existing results and data are often not available to scientists and policy makers in developing countries. Therefore, the implications of existing scientific knowledge are not obvious but have to be derived in a process of thorough interpretation and evaluation of the scientific knowledge. The IPCP intends to address this need and to provide a balanced view on the available scientific knowledge, possible interpretations, and priorities for further research. A first task of the IPCP is to identify priority questions to be addressed and the audience at which the information is targeted. Several areas where scientific expertise is needed for decision making are listed in Table 1.

Table 1: Possible topics to be addressed by the International Panel on Chemical Pollution.

Topic	Audience
<i>Assessment schemes and methodologies; priority setting and screening</i>	
Priorization of chemicals of concern (with respect to damage for human health and the environment)	SAICM (Strategic Approach to International Chemicals Management)
<i>Monitoring of environmental status</i>	
Suitability of passive air samplers for POPs monitoring, evaluation of active samplers vs. passive samplers	Governments, bodies of international conventions/protocols, ...
<i>Region-specific issues of concern</i>	
Implications of DDT usage in malaria control (environmental exposure, human exposure)	Governments of countries who want to use DDT, bodies of international conventions/protocols, ...
<i>Identification of potential and/or emerging issues</i>	
Sources, environmental transformation, pathways of exposure, and effects of perfluorinated substances	Governments, bodies of international conventions/protocols, ...

Reviewing polybrominated aromatic compounds: Governments,
emissions, physicochemical characteristics, bodies of international conventions/protocols, ...
stability and degradation, effects; replacements

This preliminary list is only a suggested starting point that will be discussed within IPCP; the list should be expanded and updated continuously. For most of the topics to be addressed by the IPCP, it is planned to establish working groups which prepare reports in which the relevant scientific information is summarized. Each working group will have a chairperson organizing the work process. The report prepared by a working group will be discussed with the steering committee and an advisory board (see below). Upon approval by steering committee and advisory board, the report will be distributed to the target group and be made available on the IPCP web page. A second form of project work within the IPCP goes beyond reviewing and summarizing available scientific knowledge in reports but includes more actual research. For this kind of project, it is anticipated that project consortia will be formed. Such a project consortium will prepare a work plan and apply for funding to support the planned research. An example for this kind of IPCP project is the planned collaboration with the Strategic Approach to International Chemicals Management, SAICM (see Table 1). In this project, it is planned to identify priority chemicals and chemical usages in different parts of the world, as it is defined as an objective in the SAICM overarching policy strategy⁹. This will require a consortium of partners in several countries from Latin America, Africa, and Asia.

It is planned that the IPCP develops relationships and collaborations with other institutions dealing with scientific and/or practical aspects of chemical pollution. These include scientific societies dealing with chemicals and effects of chemicals such as the Society of Environmental Toxicology and Chemistry (SETAC), international organizations such as UNEP¹⁰, UNIDO¹¹, WHO¹², and other UN institutions; secretariats of international conventions, and national governments. One important contribution of these partners will be to nominate members of the advisory board of the IPCP. A second contribution of IPCP partners would be the dissemination of results of the IPCP work in different institutions and regions of the world.

An important aspect for the definition of the role of the IPCP is in which respects the IPCP is different from scientific societies. The purpose of scientific societies is to foster the exchange and discussion among scientists, i.e. mainly within the scientific domain. To serve this purpose, scientific societies organize conferences and meetings and publish journals and books. The IPCP, in contrast, is intended to foster the exchange and discussion between scientists, on the one hand, and non-scientific decision makers and the public, on the other hand. In other words, scientific societies provide an arena for scientists to dispute and even disagree whereas the IPCP aims to identify, as far as this is possible, agreed knowledge and present it to a non-scientific audience in general and to policy makers in particular.

Based on the tasks to be addressed by the IPCP, an organizational structure as shown in Figure 1 seems to be appropriate for the IPCP. Working groups and project consortia, which can be established in a relatively flexible way, carry out concrete work on specific topics. Steering committee and chair are responsible for the selection of topics for WGs and PCs, review and approval of IPCP documents, and the general direction of the future development of the IPCP. Currently, the six authors from the Oslo meeting⁶ form the Steering Committee of the IPCP (with M. Scheringer as chair); it is planned to establish an election procedure for Steering Committee and chair.

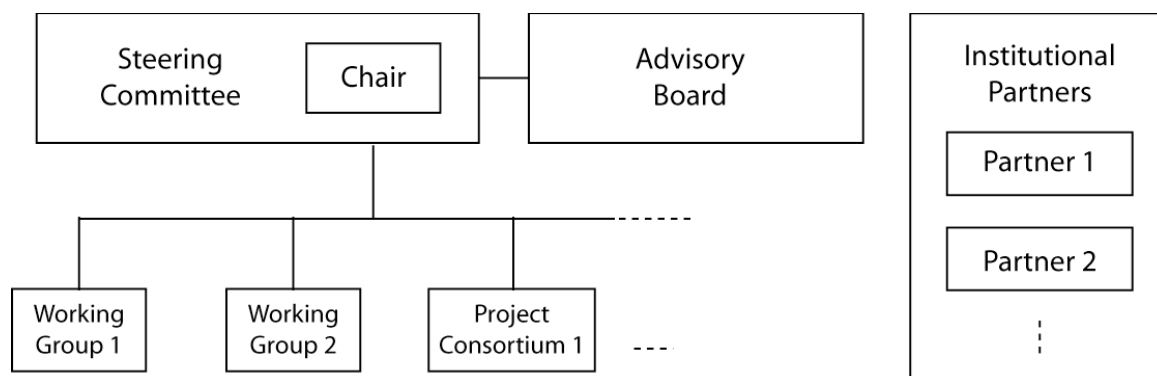


Figure 1: Anticipated structure of the International Panel on Chemical Pollution.

The role of the advisory board will be to monitor the progress of work in the individual IPCP projects, to review and, together with the steering committee, to approve IPCP documents. The members of the advisory board will represent institutional partners of the IPCP, donors to IPCP projects, and major stakeholders.

Conclusions

The IPCP intends to support the science-policy interface in the field of chemical pollution. In this function, it has the potential to fill a gap between scientific societies, international institutions, and national governments. The IPCP provides a platform for scientists to become engaged in the discussion of the impacts of chemicals on human health and the environment. Using this platform, scientists will be enabled to present their integrated view on the state of the science in priority areas in order to improve governmental decision making. The work of the IPCP will focus on knowledge transfer and communication of what scientists agree on and where they identify uncertainties and knowledge gaps. Output of IPCP work will help to relate benefits and risks of chemicals and support a sustainable risk management for chemicals.

Acknowledgement

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