**Draft road map for science to action**

**For further engaging Parties and other stakeholders in an informed dialogue for enhanced science-based action in the implementation of the conventions at the regional and national levels**

**Revised draft: 30 September 2017**

# 1. Introduction

**Background**

1. At the 2015 meetings, the conferences of the Parties to the Basel, Rotterdam and Stockholm conventions adopted decisions BC-12/22, RC-7/12 and SC-7/30, by which they recognized the importance of the science-policy interface for the effectiveness of the conventions and the need for greater access to scientific understanding in developing countries to enhance informed decision-making on the implementation of the conventions. The conferences of the Parties also stressed the need for scientific underpinning for decision-making and policymaking in the sound management of chemicals and wastes at the national and regional levels.
2. At the 2017 meetings, the conferences of the Parties adopted decisions BC-13/22, RC-8/15, SC-8/25, by which they emphasized that, through its subsidiary bodies, expert groups and other related mechanisms, including with other partners, the necessary processes are in place to ensure science-based work and decision-making under the Basel, Rotterdam and Stockholm conventions.
3. The conferences of the Parties further emphasized the importance of, and the need to enhance, the interaction between scientists, policymakers and other actors in the policy process to promote the exchange, development and joint construction of knowledge with the aim of achieving more informed decision-making for reaching the objectives of the conventions.
4. Parties and other stakeholders were encouraged to initiate action to promote science-based decision-making and action in the implementation of the conventions at the national level. The Secretariat was requested, subject to the availability of resources and in collaboration with regional centres, to undertake capacity-building and training activities to support Parties in science-based decision-making and action in the implementation of the Basel, Rotterdam and Stockholm conventions. The Secretariat was also requested to cooperate and coordinate with UN Environment and other relevant organizations, scientific bodies and stakeholders towards strengthening the science-policy interface.

**Mandate for developing a road map**

1. By decisions BC-12/22, RC-7/12 and SC-7/30, the conferences of the Parties requested the Secretariat to develop and present to the conferences of the parties at their meetings in 2017 a road map for further engaging parties and other stakeholders in informed dialogue for enhanced science-based action in the implementation of the conventions at the regional and national levels, noting that the road map should consider:
2. Exploring new activities within the mandates of the Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants to enhance science-based action to implement the conventions;
3. Addressing the gaps in access to scientific information and knowledge, the lack of capacity to provide scientific inputs to the various processes under the conventions and the need for scientific and technical advice in relation to the implementation of the conventions;
4. Facilitating the exchange of scientific and technical information among parties and other stakeholders and promoting the understanding of the scientific and technical aspects of the three conventions;
5. Possibilities for cooperation and coordination with the United Nations Environment Programme and other relevant organizations, scientific bodies and stakeholders.
6. At the 2017 meetings, the conferences of the Parties took note of the draft road map[[1]](#footnote-1) and requested the Secretariat to revise it, with a focus on enhancing science-based action at the national and regional levels, for consideration at the 2019 meetings.
7. In accordance with paragraph 8 of decisions BC-13/22, RC-8/15 and SC-8/25, the following experts were nominated by Parties through their bureau representatives to assist the Secretariat in further revising the draft road map:

African States: Mr. Babajide Ibitayo Alo (Nigeria)

Asia-Pacific States: Ms. Jian Xiaodong (China)

Ms. Roxana Maleki (Iran)

Mr. Iftikhar Gilani (Pakistan)

Mr. Ali Al-Dobhani (Yemen)

Central and Eastern European States: Ms. Kateřina Šebková (Czech Republic)

Mr. Juergen Helbig (European Union)

Ms. Magdalena Frydrych (Poland)

Latin American and Caribbean States: Mr. Agustín Harte (Argentina)

Mr. Juan Carlos Lliquín Criollo (Ecuador)

Western European and other States: Ms. Alison Kennedy (Canada)

Mr. Timo Seppälä (Finland)

Mr. Vassilios Karavezyris (Germany)

Mr. Peter Dawson (New Zealand)

1. The Secretariat was requested, by 30 September 2017, to revise the draft road map with a focus on moving from multilateral dialogue to action at the national and regional levels while avoiding duplication and inconsistencies with existing mechanisms and taking into account the views expressed by Parties during the 2017 meetings.
2. Parties are invited to submit comments on the revised draft road map, by 28 February 2018.

**2. Elements of the draft road map**

1. The draft road map took into account the situation and stakeholders analysis set out in appendix 1 to the present document. The situation analysis was based on the result of the online survey set out in appendix 2 to the present document. Further situation and stakeholder analysis may be conducted during the intersessional period between the 2017 and 2019 meetings.
2. The goal of this road map is to enhance science-based action for the implementation of the conventions at the national and regional levels.
3. The activities proposed in table 1 below are to address the following needs/challenges/opportunities, in particular in developing countries and countries with economies in transition, identified in the situation and stakeholder analysis, to achieve the goal:
4. Accessibility to scientific and technical information relevant to the conventions, in particular in developing countries and countries with economies in transition;
5. Availability of scientific and technical information relevant to the conventions in developing countries and countries with economies in transition;
6. National capacity to review and assess scientific and technical information for decision-making and implementation of the conventions.

**Table 1: Elements of the draft road map**

| **Needs, challenges and opportunities** | **Goal/objective** | **Activities** |
| --- | --- | --- |
| 1. **Accessibility to scientific and technical information relevant to the conventions in developing countries and countries with economies in transition**    * The need to address the gaps in access to scientific information and knowledge was identified;    * The need to strengthen the link between scientific/technical experts (expertise and information) and policy/decision makers was identified;    * The following information was identified as useful for developing countries and countries with economies in transition to support their science-based action at the national level: experience from other countries, national and international regulations and standards, monitoring data, information on alternatives, solid waste management, hazardous waste incineration, crematoria, endocrine disruption, etc.;    * Existing partnerships and networks could contribute to linking scientific and technical experts and policy makers to improve communication and information exchange among Parties and other stakeholders;    * Entities that could provide developing countries and countries with economies in transition with access to scientific information include: BRS Secretariat, regional centres, FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, World Bank, OECD, SAICM, other MEAs, AMAP, governments, academia, civil societies, industry associations, etc.;    * BRS conventions websites could be improved by providing a more searchable database and guiding more clearing the users to relevant resources. | 1. Enhance the information exchange on scientific aspects of the conventions through:    * The clearing house mechanism;    * Regional centres;    * Existing partnerships and network. 2. Strengthen the link between scientific/technical experts and policy/decision makers through:    * National efforts;    * Regional efforts (e.g. through regional centres);    * Global efforts (e.g. existing partnerships and networks). 3. Increase the effectiveness of information exchange and outreach on scientific aspects of the BRS conventions through enhanced collaboration between the Secretariat and other entities, e.g. FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, World Bank, OECD, SAICM, other MEAs, AMAP, governments, academia, civil societies, industry associations, etc. | 1. Identify appropriate sources to acquire scientific information (e.g. national legislation and strategies, PRTR and national reports, monitoring program, published academic literature, research data, conference documents and other information) and promote the use of such information; 2. Identify examples of efforts by regional centres in enhancing information exchange and strengthening the link between scientific/technical experts and policy/decision makers and promote such efforts; 3. Identify existing partnerships and networks that could contribute to exchange of scientific information and enhance science-based action for the implementation of the conventions at the national and regional levels and promote participation in such partnerships and networks; 4. Facilitate easy access to scientific and technical information through the ongoing strategy for clearing house mechanism; 5. Promote collaboration between the Secretariat and other entities, in particular with FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, World Bank, OECD, SAICM, other MEAs, AMAP, governments, academia, civil society and industry associations, on outreach, awareness raising and information exchange on scientific aspects of the conventions. |
| 1. **Availability of scientific and technical information relevant to the conventions in developing countries and countries with economies in transition**     * While the information on hazards is more readily available (as global information), the information specific to national or regional situations such as information on production, import and use, environmental fate, exposure, environmental and health costs, availability and applicability of alternatives at the national level, is often lacking or insufficient;    * Capacity to generate data (with regional/national specificities), such as the establishment of PRTR, regular updating of inventories, collection of relevant statistics and environmental monitoring, is lacking in developing countries. | 1. Address data gaps in developing countries and countries with economies in transition; 2. Support the generation of scientific and technical information at the national level and taking into account as far as possible specific circumstances such as those of small island developing states. | 1. Identify specific needs of Parties from developing countries and countries with economies in transition for improving the availability of scientific and technical information; 2. Undertake capacity building activities to improve at information collection at the national level; 3. Undertake capacity building activities to strengthen monitoring and research. |
| 1. **National capacity to review and assess scientific and technical information for decision-making and implementation of the conventions**    * The capacity to understand and assess domestically the implications of scientific and technical information to support policy making regarding the conventions is often lacking or insufficient;    * The capacity to provide scientific and technical inputs to various processes under the BRS conventions, e.g. review of candidate chemicals, is often lacking or insufficient;    * Scientific and technical information, preferably generated at the national level, and expert advice is needed in:      + Promoting the understanding of the scientific aspects of the convention;      + Undertaking risk analysis/evaluation of specific chemicals to support national decisions such as registration or re-authorization of pesticides, and importation;      + Providing national inputs to the various processes under the conventions. | 1. Strengthen the national capacity to review and assess scientific and technical information; 2. Strengthen the national and regional capacity to use the scientific and technical information in decision-making to implement the conventions; 3. Strengthen the national and regional capacity to provide scientific and technical inputs to various processes under the BRS conventions. | 1. Identify specific needs of Parties from developing countries and countries with economies in transition to improve the use of scientific information for decision-making for the implementation of the conventions; 2. Develop training materials and undertake training to promote use of available scientific information and engagement of stakeholders in the decision-making process; 3. Facilitate training on the use of science in decision-making including addressing uncertainty, determining the weight of evidence, considering risk principles, and the appropriate use of precautionary approaches as relevant to the BRS conventions. |

# Appendix 1: Situation and stakeholder analysis

**1. Situation analysis**

## 1.1 Online survey

1. In developing the draft road map, the Secretariat conducted an online survey[[2]](#footnote-2) from 3 August to 10 October 2016. A total of 127 respondents (governments: 72; intergovernmental organizations: 6; regional centres: 9; industry: 11; civil society: 13; academia: 13; others: 3) provided information on the challenges and opportunities in bringing science and policy together. Of these, 96 (76%) were from developing countries and countries with economies in transition. A summary of the results of the online survey is set out in annex II to the present document.
2. Respondents identified several types of involvement with intergovernmental organizations. This included participation in the meetings of the conference of the Parties and their subsidiary bodies, for example, the Chemical Review Committee of the Rotterdam Convention and the Persistent Organic Pollutants (POPs) Review Committee of the Stockholm Convention. The most commonly reported collaboration with international organizations was the implementation of projects, e.g. national implementation plans, waste management initiatives, compilation of inventories. Participating in or provision of training courses or workshops and the development of educational materials were also identified. Awareness raising campaigns such as World Health Organization (WHO) international lead poisoning prevention week of action were also mentioned. Some respondents noted that they were executing or implementing agencies for projects and others noted that they provided technical assistance.
3. Respondents indicated extensive use of scientific and technical information to inform national and international decisions or policy making processes. Scientific and technical information is regularly used to provide the rationale for new or amended laws and regulations. It is also used in risk analysis/evaluation for specific chemicals to support decisions such as authorization of the import of chemicals or the registration or re-authorization of pesticides.
4. Of the 127 respondents, 89 indicated that their organization found it easy to access and download scientific and technical information related to the conventions; 82 found it easy to access and download information for decision or policy making. Overall, respondents from developing countries and countries with economies in transition indicated lower access to information.
5. In their work, respondents indicated that they obtained information through the review of international legislation, scientific journals and books. Documents and other data available through the Secretariat and scientific bodies under the conventions and international organizations (e.g. Food and Agriculture Organization of the United Nations (FAO), UNEP, United Nations Industrial Development Organization (UNIDO), United Nations Institute for Training and Research (UNITAR) and WHO) are regularly used when developing national positions.
6. The internet (56%) and in-person contact (54%) were considered the most effective mode of obtaining scientific or policy guidance. Websites are the most commonly used sources for scientific or policy guidance (90%) followed by e-mail (79%), web conferencing (76%) and in-person contacts (76%). A higher proportion of respondents from developing countries and countries with economies in transition indicated that social media networks and online discussion forums were effective means to obtain such information.
7. The type of information sought included experience from other countries, national and international regulations, standards, and monitoring information. Topics of interest among respondents included solid waste management, hazardous waste incineration, crematoria and endocrine disruption. In addition to the use of the published scholarly literature, respondents reported the use of existing national policies such as national legislation, strategies, meeting documents and other information available through the conventions’ Secretariat and international organizations.
8. Data are generated as part of regular monitoring programmes or one-time surveys, including international initiatives such as the Global Monitoring Plan (GMP) of the Stockholm Convention, Arctic Monitoring and Assessment Programme (AMAP) and FAO Programme on the Prevention and Disposal of Obsolete Pesticides. Research conducted by governments, universities and non-governmental organizations (NGOs) generate information. Reporting requirements such as pollutant release and transfer registers (PRTR) and environmental compliance reports are also a source of data. In some countries, data collected through environmental compliance and monitoring are made available on the internet.
9. While some respondents indicated that current access to information met their needs, there were many suggestions on ways in which the BRS conventions websites could be improved. These suggestions indicated the need for the website to become a more searchable database rather than purely a repository of meeting documents, to more clearly guide the user to resources including other documents on the web, experts in other countries, or information and data from Parties. A regular news service on the topics of relevance to the BRS conventions was also suggested.[[3]](#footnote-3) Strengthening regional structures and information at the regional level was also noted as something that would improve implementation of the BRS conventions.
10. E-mail was identified as a useful means of communication, but other more interactive tools were also suggested. Greater involvement of non-government stakeholders was identified as a potential opportunity for further growth. More opportunities for civil society to comment on draft documents through a web-based platform or national/regional workshops could ensure broader participation. More consideration needs to be given to ensuring documents and other information are available in multiple languages to ensure fuller participation from all regions.

## 1.2 Challenges and opportunities identified

1. The challenges identified through the online survey included the following:
2. The cost of obtaining information;
3. The data gaps, especially data relevant to countries that are not members of the Organisation for Economic Cooperation and Development (non-OECD countries) and the lack of capacity to generate data in developing countries and countries with economies in transition;
4. The lack of information in the national language;
5. The need for improved networking, exchange of information and communication among Parties to the conventions and all stakeholders involved in the sound management of chemicals and wastes (industry, private sectors, civil society, academia) as well as increased participation of youth;
6. The lack of national capacity to review and assess information including the capacity to undertake systematic reviews of the evidence (from elaborating the search strategy, appraisal of articles, and synthesis of the evidence); and
7. Knowledge translation, i.e. making scientific information understandable to policy makers as well as a general audience, so that it can be used effectively in decision-making.
8. An improved science-policy interface could facilitate the decision-making in the BRS conventions and support their effective implementation.
9. Identifying opportunities to address the lack of capacity in developing countries and countries with economies in transition to access scientific and technical information, as well as to improve the ability for those countries to understand and assess domestically the implications of that information to support policy making regarding the Conventions at the national, regional and international levels, and, where appropriate, through building the capacity to generate relevant national data, could improve the sound management of chemicals and wastes and contribute to sustainable development, including achieving the Sustainable Development Goals.

2. Stakeholder analysis

1. This section provides an overview of the relevant stakeholders. For the successful implementation of the road map, all relevant stakeholders should actively engage in carrying out the various activities. Regular exchange on progress, challenges and opportunities will be an essential means of moving forward.

## 2.1 Parties to the BRS conventions

1. Parties to the BRS conventions are the main actors and the beneficiaries of the road map. Parties may have different roles depending on their level of development.
2. Parties have a role in supporting the science-policy interface at the national level, facilitating participation of the major groups in national discussions relevant to the BRS conventions, and supporting the involvement of major groups in regional and international fora.
3. Official contact points, competent authorities, national focal points, designated national authorities of the BRS conventions respond to the invitations for providing information and comments, nominating experts, and submitting national implementations plans and national reports, as required by the BRS conventions. In doing so, Parties are expected to solicit information and comments widely from their national stakeholders.

## 2.2 Basel and Stockholm conventions regional centres

1. Basel and Stockholm Convention regional centres play a key role in providing technical assistance and promoting the transfer of technology to developing country Parties and Parties with economies in transition relating to the implementation of the obligations under the conventions at the regional level.
2. Currently there are 14 regional and coordinating centres for the Basel Convention and 16 regional centres for the Stockholm Convention, of which 7 centres serve Parties to both conventions.
3. The regional centres are well placed to enhance collaboration within the region they serve by facilitating information exchange, making documentation available in relevant languages, providing training, fostering dialogue and facilitating input into the BRS decision-making process.

## 2.3 Subsidiary bodies and experts of the conventions

2.3.1 Basel Convention: Open-ended Working Group

1. The Open-ended Working Group (OEWG) is a subsidiary body of the Conference of the Parties to the Basel Convention. The OEWG is mandated to consider and advise the Conference of the Parties on issues relating to policy, technical, scientific, legal, institutional, administration, finance, budgetary and other aspects of the implementation of the Convention within the approved budget, including identification of the specific needs of different regions and sub-regions for training and technology transfer and to consider ways and means of ensuring the establishment and functioning of the Basel Convention Regional and Coordinating Centres for Training and Technology Transfer.
2. Various technical guidelines on environmentally sound management of wastes and other guidance documents of a scientific nature have been developed, through the work of intersessional and expert working groups. Parties and observers have opportunities to take part in such groups and contribute to their work.

2.3.2 Rotterdam Convention: Chemical Review Committee

1. The Chemical Review Committee (CRC) is a subsidiary body of the Conference of the Parties to the Rotterdam Convention. In accordance with the processes provided in Articles, 5, 6 and 7 of the Convention, the Committee reviews notifications of final regulatory actions and proposals for listing severely hazardous pesticide formulations in Annex III to the Rotterdam Convention and makes recommendations to the Conference of the Parties for listing such chemicals and pesticide formulations in Annex III to the Convention.

**2.3.3 Stockholm Convention: Persistent Organic Pollutants Review Committee**

1. The Persistent Organic Pollutants Review Committee (POPRC) is a subsidiary body of the Conference of the Parties to the Stockholm Convention. In accordance with the processes provided in Article 8 of the Convention, the Committee reviews information on chemicals that are proposed by Parties for listing in Annex A, B and/or C to the Stockholm Convention. The process includes the review of a wide range of scientific and technical data provided by Parties and observers.

2.3.4 Stockholm Convention: global monitoring plan

1. The global monitoring plan is an important component of the effectiveness evaluation of the Stockholm Convention. It provides a framework for the collection of comparable monitoring data on the presence of POPs from all regions to provide data on regional and global environmental transport and to identify changes in POP concentrations over time.
2. The global monitoring plan is implemented at the regional level, with data and information collection, including capacity-enhancement activities and development of regional monitoring reports, under the responsibility of regional organization groups in each of the five UN regions. A global coordination group oversees the implementation of the global monitoring plan across the regions and the development of the global monitoring plan.
3. A guidance document on the global monitoring plan is also available to support comparability and consistency in monitoring results, including guidelines for collection, analysis and reporting of information and data.

2.3.5 Stockholm Convention: other science-based assessments

1. To assist Parties in implementing Article 5 of the Stockholm Convention and take measures to reduce or eliminate releases from unintentional production of POPs, best available techniques and best environmental practices (BAT/BEP) have been documented for the sources of release of these chemicals, and relevant guidelines and guidance developed to support Parties in implementing their obligations under the Stockholm Convention.
2. Furthermore, a harmonized framework for the elaboration of comparable release inventories of unintentionally produced POPs is currently provided by the Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs. The work on these matters is conducted through the joint Toolkit and BAT/BEP expert roster, including government-nominated technical experts and representatives of industry and the civil society.
3. The Stockholm Convention requires the Conference of the Parties at least every three years, to evaluate the continued need for DDT for disease vector control on the basis of available scientific, technical, environmental and economic information. A DDT Expert Group has been established to provide an assessment of production and use of DDT and its alternatives for disease vector control and to make recommendations on the continued need for DDT and on other relevant issues pertaining to DDT.

## 2.4 Partnerships of the conventions

1. Partnerships of the conventions contribute, among other things, to linking scientific experts with policy makers and support science-based action for the implementation of the conventions.
2. For example, the PCB Elimination Network[[4]](#footnote-4) connects experts from academia, industry, civil society and policy makers from governments. The Advisory Committee of the Network identifies the need for further guidance and information, and provides such technical support accordingly. The Global Alliance for Alternatives to DDT[[5]](#footnote-5) links the scientific experts and policy makers in a similar manner.
3. The Partnership for Action on Computing Equipment (PACE) under the Basel Convention was a multi-stakeholder public-private partnership that provided a forum for representatives of personal computer manufacturers, recyclers, associations, academia, environmental groups, international organizations and governments to increase the environmentally sound management of used and end-of-life computing equipment.[[6]](#footnote-6) Through the working group of the Partnership, PACE guidance document[[7]](#footnote-7) was developed.

## 2.5 Secretariat of the Basel, Rotterdam and Stockholm conventions

1. The functions of the Secretariat are provided in Article 16 of the Basel Convention, Article 19 of the Rotterdam Convention and Article 20 of the Stockholm Convention. The Secretariat, among other things, makes arrangements for meetings of the conferences of the Parties and their subsidiary bodies and provides them with services as required; prepares and transmits reports or information as required by the conventions or the conferences of the Parties; receives, compiles and makes available information as required by the conventions or the conferences of the Parties; facilitates assistance to Parties, particularly developing country Parties and Parties with economies in transition, on request, in the implementation of the conventions; ensures necessary coordination with the secretariats of other relevant international bodies; communicates with focal points and competent authorities.
2. Under the Stockholm Convention, the Secretariat serves as a clearing-house mechanism for information on POPs, including information provided by Parties, IGOs and NGOs.

## 2.6 Intergovernmental organizations

1. IGOs, in particular the following nine organizations that are participating in the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) are essential to strengthening cooperation and increasing coordination in the field of chemical safety:
   1. Food and Agriculture Organization of the United Nations (FAO);
   2. International Labour Organization (ILO);
   3. United Nations Development Programme (UNDP);
   4. United Nations Environment Programme (UNEP);
   5. United Nations Industrial Development Organization (UNIDO);
   6. United Nations Institute for Training and Research (UNITAR);
   7. World Health Organization (WHO);
   8. World Bank; and
   9. Organisation for Economic Co-operation and Development (OECD).
2. At its second session, the United Nations Environment Assembly requested the Executive Director to strengthen the science-policy interface regarding the environmental dimension of the 2030 Agenda for Sustainable Development, including by continuing to collaborate with other relevant United Nations bodies and to facilitate the work of scientific panels that provide integrated assessments to support policy making, especially those for which United Nations Environment Programme has the secretariat function.[[8]](#footnote-8)
3. The international community is considering the role of the Strategic Approach to International Chemicals Management (SAICM) beyond 2020. The result of that consideration will be adopted in the fifth session of the International Conference on Chemicals Management (ICCM-5) in 2020.

## 2.7 Industry/private sector

1. Industry and the private sector have an important role in the sound management of chemicals and wastes, including research, development of alternatives and in ensuring that chemicals are manufactured, transported, used and disposed in a sound manner. They are a source of data and information and have a responsibility to inform workers, consumers and other users about the adverse health and environmental effects and preferred environmental management practices. Industry and the private sector play an important role in providing state-of-art technical information on, and knowledge of, the chemicals under review by the subsidiary bodies of the conventions.

## 2.8 Civil society

1. Civil society contributes to the sound management of chemicals and wastes through awareness raising, monitoring and surveillance activities, and providing information to the public. Civil society organizations can also act as a voice for consumers, workers, vulnerable and indigenous peoples.

## 2.9 Academia

1. Researchers in academia contribute to the expansion of the knowledge base on chemicals and wastes and their effects. They may also be involved in monitoring and surveillance activities, exploration of alternatives, and development of new technologies. Independent experts often work within academia or other research institutions.
2. Scientific societies or academies promote their discipline and often have an interest in both education and the science-policy interface. Their membership will include leading experts in their field of knowledge.

## 2.10 GEF and other donors

1. Financial support is a crucial part of all activities relevant to the implementation of the BRS conventions, in particular for developing countries and countries with economies in transition.
2. The Global Environmental Facility (GEF) is currently the principal entity entrusted with the operations of the financial mechanism of the Stockholm Convention. It has been responsive to growing needs for funding for POPs by increasing allocated resources in each replenishment period, although there is still a gap between funding provided for POPs activities through the GEF and the funding identified as being needed to fulfil Convention obligations. The GEF has an advisory body called the Scientific and Technical Advisory Panel (STAP). It comprises of six expert advisers supported by a Secretariat, who are together responsible for connecting the GEF to the most up to date, authoritative, and globally representative science.

# Appendix 2: Results of the online survey on “From science to action” for the Basel, Rotterdam and Stockholm conventions

1. The survey

1. The Secretariat conducted an online survey (http://fs.pops.int/fs-ScienceToAction.aspx) from 3 August to 10 October 2016 to collect information on the challenges and opportunities of Parties and stakeholders of the Basel, Rotterdam and Stockholm (BRS) conventions in bringing science and policy together.

2. Respondents

1. A total of 127 respondents from 76 countries participated in the online survey. Of these 31 (35%) were from developed countries and 96 (65%) from developing countries and countries with economies in transition. Figure 1 illustrates the composition of the 127 respondents.



Figure 1: Composition of the 127 respondents to the online survey

1. With regard to the involvement in chemical interest groups, academic networks or other centre of excellence in the relevant field, 62 (49%) responded that they were taking part in such groups.
2. Some examples included (in no particular order): Society of Environmental Toxicology and Chemistry (SETAC); Chemicals Management Plan Stakeholder Advisory Council of Canada; International POPs Elimination Network (IPEN); Zero Mercury group; Arctic Monitoring and Assessment Programme (AMAP); German Chemical Society; European Geoscience Union; International Panel on Chemical Pollution (IPCP); Northern Contaminants Program; Southern African Society for Aquatic Scientist; Chemical Watch; International Commission on Occupational Health; Indian Association of Occupational Health; Indian Chest Society; Indian Medical Association; Interstate Commission on Sustainable Development Public Council of Central Asia; Scientists for Global Responsibility; Brazilian Chemical Society; Brazilian Society of Oceanography; Southern African Pesticide Regulators Forum; Secretariat of the Pacific Community; Northern Contaminants Program; Partnership for Action on Computing Equipment (PACE); European EcoForum; WHO Chemical Risk Assessment Network; European Monitoring and Evaluation Programme (EMEP); Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM); Latin American and Caribbean Chemical Emergency Response Network (REQUILAC); Network of Environment and Health Laboratories for Latin America and Caribbean (RELAC); Process Safety Management committee of the Canadian Society for Chemical Engineering; Sub-committee on Environmental Management Systems for ISO implementations; Comisión Nacional para la Gestión Ambientalmente Racional de los Productos Químicos en Honduras (CNG).
3. With regard to the involvement in the work of the intergovernmental organizations (IGOs), 71 (56%) were collaborating with UNEP, 34 (27%) with FAO, 28 (22%) with UNDP and 28 (22%) with UNIDO (see Figure 2).
4. Some examples of collaboration included (in no particular order): preparation and implementation of GEF and other projects; SAICM Quick Start Programme and other projects; monitoring projects with UNEP and WHO; participation in meetings, workshops and training activities; preparation of national profile for WHO; OECD task force; pesticide management with FAO; convention focal points; developing guidance and guidelines.



Figure 2: Number of respondents collaborating with IGOs (multiple responses)

1. With regard to the involvement in the work of multilateral environmental agreements (MEAs) in science, policy or other aspects, 88 (69%) were collaborating with the Stockholm Convention, followed by 67 (53%) with the Basel Convention, 60 (47%) with the Rotterdam Convention, 59 (46%) with the Minamata Convention, and 59 (46%) with the Strategic Approach to International Chemicals Management (SAICM) (see Figure 3).
2. Some example of other MEAs included: Chemical Weapons Convention (CWC); Convention on Long-Range Transboundary Air Pollution (CLRTAP); and United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD).



Figure 3: Number of respondents collaborating with MEAs in science, policy or other aspects (multiple responses)

1. With regard to the areas of work related to chemicals and wastes issues, 86 (68%) were working on issues related to regulation and legal issues, 79 (62%) on policy making, 76 (60%) on monitoring, 64 (50%) on risk evaluation or assessment, and 54 (43%) on human health (see Figure 4).



Figure 4: Number of respondents working on chemicals and wastes issues (multiple responses)

1. With regard to the respondents’ familiarity with the BRS conventions, 49 (39%) had a good understanding of the Basel Convention, 59 (46%) on the Rotterdam Convention, and 82 (65%) on the Stockholm Convention (see Figure 5).



Figure 5: Respondents’ familiarity with the BRS conventions

3. Needs for science-to-policy interface

* 1. Experience in using scientific and technical information related to chemicals and wastes for decision-making

1. With regard to the experience in using scientific and technical information for decision making-making, 99 of the 127 respondents (78%) had such experience.
2. With regard to the experience in finding scientific and technical information, the respondents had looked for information on the following nine areas: 93 (73%) on policy and regulations; 79 (62%) on environmental or human health; 72 (57%) on inventory and stockpiles; 67 (53%) on environmental or human exposure; and 66 (52%) on use, production and trade; 61 (48%) on releases and monitoring data; 53 (42%) on alternatives; 53 (42%) on environmental fate; and 47 (37%) on management options (BAT/BEP) (see Figure 6).



Figure 6: Number of respondents with experience in finding scientific and technical information related to chemicals and wastes for decision-making in different areas (multiple responses)

1. For those nine areas, the respondents further indicated whether they found the information useful, scarce or not reliable or lacking. Those who found the information useful ranged from 44 to 68%; scarce or not reliable from 11 to 19%; and lacking from 7 to 14% (see Figure 7).



**Figure 7: Percentage of respondents finding scientific and technical information useful or not**

1. Table 1 summarizes the percentage of respondents who found the relevant information and could apply it to decision-making. Respondents from developing countries and countries with economies in transition had more challenges in finding information related to policy, regulations, environmental or human health effects, exposure data, releases, monitoring data, environmental fate, management options and BAT/BEP while they were able to find relevant information on inventory, stockpiles and alternatives compared to respondents from developed countries.

**Table 1. Percentage of respondents in each information area who found relevant information and could apply it to decision-making**

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| --- | --- |
| **Information area** | **Responses from developing countries and countries with economies in transition** |
| Policy, regulations | 61% |
| Environmental or human health effects | 48% |
| Inventory, stockpiles | 55% |
| Environmental or human exposure data | 48% |
| Use, production, trade | 48% |
| Releases, monitoring data | 50% |
| Alternatives | 59% |
| Environmental fate | 57% |
| Management options, BAT/BEP | 66% |

1. The proportion of respondents who indicated they were able to find relevant information differed depending on the topic area and status of economic development:
2. Overall, nearly a third (31%) of respondents who searched for information on a topic area indicated they were not able to find information needed to support decision-making;
3. About half of the respondents indicated that relevant information on use, production, trade and exposure were not available;
4. While overall about half (49%) of respondents also indicated not being able to find relevant information on alternatives, inventories and stockpiles, a larger proportion of respondents from developed countries indicated that such information was not available;
5. Overall respondents indicate that relevant information on policy, regulations, environmental or human health effects, and management options (BAT/BEP) were more readily available; a higher proportion of respondents from developing countries and countries with economies in transition indicated that such information was not available. For example, only 48% of respondents from those countries indicated they were able to find relevant information on effects of chemicals and waste on human health or the environment, compared to 80 percent of respondents from developed countries who indicated such information was available.
6. Some examples of references, information sources or search strategies that have been useful included (in no particular order):
7. Information provided by the Secretariat of the BRS conventions (e.g. national implementation plans; national reports; Toolkit; BAT/BEP guidance; POPs Review Committee documents; POPs global monitoring reports; Rotterdam Conventions Decision Guidance Documents for chemicals listed in Annex III; Basel Convention technical guidelines on environmentally sound management of wastes);
8. Information provided by the United Nations and other IGOs (e.g. websites, guidance, toolkit, reports and other materials developed by FAO, GEF, GHS, IARC, ILO, INTERPOL, ISO, NAFTA, OECD, SAICM, UNEP, UNIDO, UNITAR, WHO; International Programme on Chemical Safety (IPCS); InforMEA);
9. Information provided by the Regional Centres;
10. Information provided by bodies of the governments and regional economic integration organizations (e.g. Australia: Environment Protection Agency (EPA); Canada: National Pollutant Release Inventory (NPRI), Global Atmospheric Passive Sampling Network (GAPS), Canadian Health Measure Survey (CHMS); Czech Republic: GENASIS; New Zealand: Environment Protection Agency (EPA); Commission of the European Union: EU Directives and Regulations, European Chemicals Agency (ECHA), European Food Safety Authority (EFSA), Registration, Evaluation, Authorization and Restriction of Chemicals (REACH); United Kingdom: National Atmospheric Emissions Inventory (NAEI); United States of America: Agency for Toxic Substances and Disease Registry (ATSDR); Environment Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), National Library of Medicine (NLM); National Institute of Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC); National Health and Nutrition Examination Survey (NHANES); Hazardous Substances Data Bank (HSDB), Toxnet; Pollution Release and Transfer Register (PRTR) data from various countries; Data Evaluation Records; National Chemicals Profile; Export Notifications);
11. Information provided by academia and research institutes (e.g. Science Direct; SciELO; PubMed; Arctic Monitoring and Assessment Programme (AMAP); Northern Contaminants Program (NCP); Clean Production Institute at Lowell (University of Massachusetts); MONET (RECETOX); Pesticide Properties Database (PPDB));
12. Information provided by civil society and industry groups (International POPs Elimination Network (IPEN); Fibre Cement Product Manufacturers Association (FCPMA); material safety data sheets (MSDS)).
    1. Access to scientific and technical information and capacity to use it within the organization
13. Of the 127 respondents, 89 (76%) indicated their organization found it easy to access and download scientific and technical information related to the BRS; 82 (66%) could easily access and download scientific publications for decision making; 47 (37%) had access to online reference library; 41 (32%) had access to geo-referenced information; and 53 (42%) had capacity to customize, integrate or synthesize various kinds of information on a given chemical or waste stream (see Figure 8).



**Figure 8: Percentage of respondents with access to scientific and technical information and capacity to use it within the organization**

1. With regard to access to online libraries, 47 of 127 respondents (37%) responded that they had access to libraries provided by governments (e.g. Brazil: http://capes.gov.br/, http://www.ibama.gov.br/sophia/index.html; USA: https://www.epa.gov/libraries; ECHA: https://echa.europa.eu/information-on-chemicals/registered-substances; https://toxnet.nlm.nih.gov/); IGOs (e.g. FAO: Pesticide registration toolkit; WHO: http://www.who.int/library/en/; OECD: http://webnet.oecd.org/hpv/ui/Default.aspx); academia (e.g. University of Toronto, Sao Paulo State University, PubMed, SciELO, ATSDR, Sciencedirect); and regional centres (e.g. CETESB: http://modal.cetesb.sp.gov.br/portal/).
2. With regard to geo-referenced information, 41 of 123 respondents (33%) indicated they used geo-referenced information or information organized by particular climate groups, regions, countries, or municipalities. The level of aggregation that is most relevant for use was at the national level.
3. With regard to the capacity to use scientific and technical information, 53 of 123 respondents (43%) had such capacity to customize, integrate or synthesize various kinds of information on a given chemical such as thresholds for health and environmental safety.
4. Table 2 summarizes the percentage of respondents who had easy access to information. More respondents from developed countries had easy access to online reference libraries, geo-referenced information and had capacity to synthesize the information than those from developing countries and countries with economies in transition.

**Table 2. Percentage of respondents who had easy access to information**

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| **Access to information** | **Responses from developing countries and countries with economies in transition** |
| Access to online reference libraries | 27% |
| Use of geo-referenced information | 24% |
| Capacity to synthesize information | 39% |

1. Respondents from developing countries and countries with economies in transition indicated lower access to information than those from developed countries. The largest difference was for access to online reference libraries where only 27% of respondents from the developing countries and countries with economies in transition indicated they had access, compared to 68% of respondents from developed countries. A similar difference was found for use of geo-referenced data (24% compared to 62%).
2. The respondents highlighted the following challenges in accessing and using scientific and technical information (in no particular order):
   1. The cost of obtaining information – articles and journals that are not open access or databases that are only available on subscription or by membership;
   2. The many data gaps, especially data relevant to non-OECD member states;
   3. The lack of information in the national languages;
   4. While information on hazards is more readily available, information on production, import and use, environmental fate, exposure, and environmental and health costs, which vary by national or regional context, is often lacking or of insufficient quality;
   5. The lack of capacity to generate data in developing countries, such as the establishment of pollutant release and transfer registries, regular updating of inventories, collection of relevant statistics, and environmental monitoring;
   6. The need for additional information on alternatives as well as information on successful experiences in other countries;
   7. The need for improved networking and exchange of information among Parties to the conventions and to improve communication among all stakeholders involved in the sound management of chemicals and wastes as well as increased participation of youth;
   8. Insufficient coordination among the authorities responsible for the implementation of the Basel, Rotterdam and Stockholm conventions at the national level;
   9. Insufficient financial or technical resources including insufficient capacity in national or regional resource centres;
   10. The lack of national capacity to review and assess information including the capacity to undertake systematic reviews of the evidence (from elaborating the search strategy, appraisal of articles, and synthesis of the evidence);
   11. Knowledge translation – making scientific information understandable to a general audience – so that it can be used effectively in decision-making; and
   12. The lack of standard approaches which can make it difficult to compare data – for example, the differences between the hazard classification under Basel and the Globally Harmonized System.

4. Enhanced mechanisms for knowledge and information sharing

* 1. Generating and sharing information on chemicals and wastes

1. Of the 124 respondents, 84 (68%) indicated they had generated information on chemicals and wastes; 47 (56%) of respondents indicated that these data and information were made publicly available without restrictions while 27 (32%) indicated these were available with restrictions and 10 (12%) said this information was not made publically available.
2. 61% of the respondents from developing countries and countries with economies generated information on chemicals and wastes. Respondents from developed countries indicated that 56% of this information was made available to the public without restrictions, and 44% with restrictions. While respondents for developing countries and countries with economies in transition also indicated 56% of this information was made available without restrictions, about 26% was made available with restrictions and 18% was not made available.
3. The forms of the data and information generated by the organizations of the respondents included formal technical research reports (44%), spreadsheets (24%), information exchange platform (18%) and others (15%).
4. Some examples of information exchange platforms included the following (in no particular order): [www.ineris.fr/substances/](http://www.ineris.fr/substances/); [www.genasis.cz](http://www.genasis.cz); [www.pops-gmp.org](http://www.pops-gmp.org); [www.elspac.org](http://www.elspac.org); [www.espac.eu](http://www.espac.eu); [www.inti.gob.ar/basilea/](http://www.inti.gob.ar/basilea/); <http://www.basel.int/tabid/2334/Default.aspx>; <http://bibliotecatecnicacescco.blogspot.com/>; [www.cetesb.sp.gov.br/](http://www.cetesb.sp.gov.br/); <http://ambiente.sp.gov.br/>.
   1. Effectiveness of the modalities for scientific and technical information exchange
5. About half of the respondents considered the current modalities for facilitating exchange of scientific and technical information among Parties and other stakeholders and promoting the understanding of the scientific and technical aspects of the BRS conventions sufficient 60 (47%) (see Figure 9).



**Figure 9: Views of respondents on current modalities for scientific and technical information exchange**



**Figure 10: Effectiveness of tools for obtaining up-to-date scientific or policy guidance**

1. The tools for obtaining up-to-date scientific or policy guidance that was considered most effective was through a dedicated website (56%), in person (54%), web conferencing (24%), emails and messaging services (23%), online discussion forums (13%), cloud collaboration tools (13%) and social network (12%) (See Figure 10).
2. Table 3 summarizes the percentage of respondents who considered the tools for obtaining up-to-date scientific or policy guidance useful. More respondents from developing countries and countries with economies in transition considered dedicated website, web conferencing, emails and messaging services, online discussion forums, cloud collaboration tools and social network as useful tools for obtaining guidance than those from developed countries.

Table 3. Percentage of respondents who considered the tools for obtaining up-to-date scientific or policy guidance useful

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| **Tools for obtaining up-to-date scientific or policy guidance** | **All respondents (127)** | **Respondents from developing countries and countries with economies in transition (96)** |
| Dedicated website | 56% | 56% |
| In person | 54% | 53% |
| Web conferencing | 24% | 29% |
| Emails and messaging services | 23% | 25% |
| Online discussion forums | 13% | 16% |
| Cloud collaboration tools | 13% | 14% |
| Social network | 12% | 16% |

1. Table 4 summarizes the percentage of respondents who have actually used tools for obtaining up-to-date scientific or policy guidance. More respondents from developed countries have actually used all tools mentioned than those from developing countries and countries with economies in transition.

Table 4. Percentage of respondents who have used the tools for obtaining up-to-date scientific or policy guidance

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| **Tools used for obtaining up-to-date scientific or policy guidance** | **All respondents (127)** | **Respondents from developing countries and countries with economies in transition (96)** |
| Dedicated website | 90% | 87% |
| In person | 76% | 73% |
| Web conferencing | 76% | 74% |
| Emails and messaging services | 79% | 79% |
| Online discussion forums | 32% | 28% |
| Cloud collaboration tools | 48% | 47% |
| Social network | 54% | 52% |

1. The preferred mode of obtaining scientific or policy guidance is in person or on the internet. Websites are the most commonly used sources for scientific or policy guidance, followed by e-mail, web conferencing and in-person contacts. A higher proportion of respondents from developing countries and countries with economies in transition indicated that social media networks and online discussion forums were effective means to obtain such information.

5. Identifying challenges and suggestions for improvements

1. While some respondents indicated that current access to information met their needs there were many suggestions on ways in which the BRS website could be improved. These suggestions indicated the need for the website to become a more searchable database rather than purely a repository of meeting documents and to more clearly guide the user to resources, either other documents on the web, experts in other countries, and information and data from Parties. A regular news service on the topics of relevance to the BRS conventions was also suggested. Strengthening regional structures and information at the regional level was also noted as something that would improve implementation of the BRS conventions.
2. E-mail was identified as a useful means of communication, but other more interactive tools were also suggested. A current limitation in the BRS processes that was identified is the limited involvement of non-government stakeholders. More opportunities for civil society to comment on draft documents through a web-based platform or national/regional workshops could ensure broader participation. More consideration needs to be given to ensuring documents and other information are available in multiple languages to ensure fuller participation from all regions.
3. The respondents highlighted the following shortcomings of current modalities for scientific and technical information exchange:
   1. The population at large is not aware of relevant information portals and websites;
   2. The BRS websites can be difficult to navigate, and often information submitted by stakeholders is not available enough in advance of meetings;
   3. When considering the entire population only a very small number of stakeholders participate in the conventions;
   4. Decisions are taken by small groups of technical committee members without sufficient input from others who also hold additional relevant information;
   5. Scientific and technical experts could be invited to participate in deliberations, especially when there is a need for specific expertise that is lacking among existing members;
   6. Greater effort is needed to ensure that scientific information is synthesized and presented clearly to be useful to decision makers and non-specialist stakeholders;
   7. Continued lack of capacity in developing countries, such as limited internet coverage, inadequate IT equipment, limited ability to obtain background materials needed, data interpretation capacity, and access to decision support systems;
   8. Webinars are not as effective as workshops - Parties could be invited to workshops on regular basis and the materials from the workshops made easily accessible online;
   9. Language barriers that limit access to and exchange of information;
   10. Overlap and duplication among MEAs and other treaties dealing with chemicals;
   11. Need for greater cooperation between the experts of the Basel, Stockholm and Rotterdam Convention
   12. Limited information sharing between Parties in the region which is made more difficult with frequent changes of focal points for the conventions;
   13. Insufficient information relevant to developing countries, and lack of information on alternatives.
4. Suggestions for enhanced mechanisms for knowledge and information sharing included the following:
   1. Create an information hub ("one-stop shop") that would allow access to all kinds of information about a given chemical or waste stream, including published articles and government information, a database where one could search for information by chemical, or by category (e.g. alternatives, regulations, etc.), or by country/region;
   2. Establish a platform to exchange experiences on the management of chemicals and wastes, such as a link on the BRS websites to facilitate information exchange among Parties and regular dissemination of national and other topical information, including new or revised guidance documents;
   3. Share technical guidance documents and other relevant information related to the BRS conventions through messaging services, social network and the regional centres;
   4. Support the ongoing strategy for clearing house mechanism of the BRS conventions;
   5. Use regional and sub-regional centres as information and resource centres for BRS conventions, to hold annual workshops and to host regional discussion forums and meetings;
   6. Create a mechanism to foster discuss/exchange information on certain topics at the regional level;
   7. Strengthen stakeholder involvement/consultation in BRS processes/activities and encourage individuals with a strong interest in chemicals and wastes issues to take part in discussions, fora, provide their views and comments on certain technical documents or invite them to participate in regional trainings;
   8. Reach out to other science-policy groups to enhance collaboration, improve monitoring efforts, fill knowledge gaps and improve awareness of emerging issues;
   9. Foster greater disclosure of data and information and institute a mechanism to assess the information used to support decision-making, including the use of a weight of evidence approach that takes into account the relevance, quality, reliability, completeness of the data available;
   10. Improve communication between science (researchers) and action (government, environmental agencies, etc.) by making the information more easily understood and relevant, including better guidance to foster more consistent interpretation of information and implementation of obligations;
   11. Use Web-conferencing (scheduled to accommodate agencies in different time-zones) and make recordings available for others to access;
   12. Recognize the capacity of YouTube as a medium for awareness raising and a means of distribution of training videos and other materials;
   13. Create a platform to engage the younger generation;
   14. Build the capacity of local NGOs to engage in national and regional discussions;
   15. Harmonize data structure to facilitate exchange and comparability of data and harmonize international rules and regulations to foster better management of hazardous chemicals;
   16. Make more information and documents available in the six official languages of the United Nations.

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1. UNEP/CHW.13/INF/50-UNEP/FAO/RC/COP.8/INF/35-UNEP/POPS/COP.8/INF/52. [↑](#footnote-ref-1)
2. <http://www.brsmeas.org/tabid/5276/Default.aspx>. [↑](#footnote-ref-2)
3. A monthly newsletter of the Secretariat of the BRS conventions (BRS Newsletter) has been available since March 2016. <http://www.brsmeas.org/tabid/4633/Default.aspx>. [↑](#footnote-ref-3)
4. Established in decision SC-4/9. [↑](#footnote-ref-4)
5. Established in decision SC-4/2. [↑](#footnote-ref-5)
6. Established in decision IX/9. [↑](#footnote-ref-6)
7. UNEP/CHW.13/INF/31/Rev.1. [↑](#footnote-ref-7)
8. Resolution 2/5, section V, science-policy interface. [↑](#footnote-ref-8)