

**Stockholm Convention
on Persistent Organic
Pollutants**

Persistent Organic Pollutants Review Committee
Sixth meeting
Geneva, 11–15 October 2010

**Report of the Persistent Organic Pollutants Review Committee
on the work of its sixth meeting****I. Opening of the meeting**

1. The sixth meeting of the Persistent Organic Pollutants Review Committee was held at the Varembe Conference Centre in Geneva from 11 to 15 October 2010. Mr. Reiner Arndt (Germany), Chair of the Committee, declared the meeting open at 10 a.m. on Monday, 11 October 2010.
2. Mr. Donald Cooper, Executive Secretary of the Secretariat of the Stockholm Convention on Persistent Organic Pollutants, welcomed the Committee members and observers. Commending the Committee on its work over its previous meetings, he stressed that precaution underlay the concerns of all the parties and the Committee and was embedded within the Convention. Given the renown of the experts present, it would not be surprising if views were to differ, but what was essential was to ensure that the Committee continued to apply sound science to its deliberations to provide a solid basis for decisions taken by the Conference of the Parties. He acknowledged the changing nature of the Committee's work, pointing out that it was being proactive, as demonstrated by its work programme, in addition to receiving new mandates from the Conference of the Parties. He pledged the Secretariat's support as needed, including in assisting the Committee in getting to grips with its first paperless meeting, an initiative that was being piloted in preparation for the fifth meeting of the Conference of the Parties.

II. Organizational matters**A. Welcome to new members**

3. The Chair welcomed the 17 experts who had been designated to serve as members of the Committee for a four-year term that ran from May 2010 to May 2014.

B. Adoption of the agenda

4. The Committee adopted the agenda set out below, on the basis of the provisional agenda which had been circulated as document UNEP/POPS/POPRC.6/1/Rev.1:
 1. Opening of the meeting.
 2. Organizational matters:
 - (a) Welcome to new members;
 - (b) Adoption of the agenda;
 - (c) Organization of work.
 3. Operational issues:
 - (a) Rotation of the membership in May 2012;

- (b) Operating procedures of the Committee;
 - (c) Standard workplan for the preparation of a draft risk profile and draft risk management evaluation during the intersessional period between the Committee's sixth and seventh meetings.
4. Technical work:
 - (a) Work programmes on new persistent organic pollutants as adopted by the Conference of the Parties;
 - (b) Basel Convention technical guidelines on persistent organic pollutants: new persistent organic pollutants;
 - (c) Additional consideration of new persistent organic pollutants;
 - (d) Debromination of brominated flame retardants;
 - (e) Intersessional work on substitution and alternatives;
 - (f) Intersessional work on toxic interactions;
 - (g) Report on the outcomes of activities undertaken for the effective participation of parties in the Committee's work.
 5. Consideration of the draft risk management evaluation on endosulfan.
 6. Consideration of draft risk profiles:
 - (a) Hexabromocyclododecane;
 - (b) Short-chained chlorinated paraffins;
 - (c) Adverse effects of endosulfan on human health.
 7. Implementation of paragraphs 3 and 4 of Article 3 of the Stockholm Convention: regulatory and assessment schemes for new and existing pesticides and industrial chemicals.
 8. Other matters.
 9. Dates and venue of the Committee's seventh meeting.
 10. Adoption of the report.
 11. Closure of the meeting.

5. The Committee agreed that under agenda item 8, "Other matters", it would discuss chemicals occurring as unintentional trace contaminants in products and articles, a project on products free of persistent organic pollutants, a review of the linkages between persistent organic pollutants and climate change, the work of the Organization for Economic Cooperation and Development (OECD) on perfluorinated compounds, a proposal for an article by the Committee, and experience gained with the paperless meeting.

C. Organization of work

6. The Chair drew attention to the objectives and possible outcomes of the meeting, as described in the scenario note for the meeting (UNEP/POPS/POPRC.6/INF/1), and the tentative schedule for the week (UNEP/POPS/POPRC.6/INF/2). The Committee agreed to conduct the meeting in accordance with the schedule set out in the latter document, subject to revision as necessary.

7. The Committee agreed to conduct its work in plenary session and to establish such contact, drafting and "friends of the chair" groups as proved necessary. In accordance with decision SC-4/20, the Committee met in closed session on Monday, 11 October 2010, at 9 a.m. to review issues pertaining to conflicts of interest of the members. None of the Committee members indicated that they had any conflicts of interest relating to the Persistent Organic Pollutants Review Committee process as set out in Article 8 of the Stockholm Convention.

D. Attendance

8. The meeting was attended by the following 29 Committee members: Ms. Norma Sbarbati Nudelman (Argentina), Mr. Choviran Ken (Cambodia), Mr. Robert Chénier (Canada), Mr. Abderaman Mahamat Abderaman (Chad), Mr. Ricardo Orlando Barra Ríos (Chile), Mr. Jianxin Hu (China), Mr. José Álvaro Rodríguez (Colombia), Ms. Floria Roa Gutiérrez (Costa Rica), Mr. Ivan Holoubek

(Czech Republic), Mr. Timo Seppälä (Finland), Mr. Sylvain Bintein (France), Mr. Reiner Arndt (Germany), Mr. John Pwamang (Ghana), Mr. Pablo Ricardo Rodríguez Rubio (Honduras), Ms. Chhanda Chowdhury (India), Mr. Masaru Kitano (Japan), Mr. Mohammed Khashashneh (Jordan), Mr. Mohammad Aslam Yadallee (Mauritius), Mr. Peter Dawson (New Zealand), Ms. Stella Mojekwu (Nigeria), Ms. Maria Manuela Araújo Pereira (Portugal), Ms. Kyunghee Choi (Republic of Korea), Ms. Bettina Hitzfeld (Switzerland), Mr. Fouad Elok (Syrian Arab Republic), Mr. Jarupong Boon-Long (Thailand), Mr. Komla Sanda (Togo), Ms. Svitlana Sukhorebra (Ukraine), Ms. Fransisca Katagira (United Republic of Tanzania), Mr. Samuel Banda (Zambia).

9. The members from Bulgaria and Egypt were unable to attend.

10. In addition, the meeting was attended by representatives of the following countries as observers: Australia, Azerbaijan, Brazil, Denmark, Israel, Netherlands, Norway, Pakistan, Poland, Russian Federation, Sierra Leone, Slovakia, Sweden, United States of America, Uruguay. The European Union was also represented as an observer.

11. Representatives of the following United Nations bodies and specialized agencies also attended the meeting as observers: Food and Agriculture Organization of the United Nations, Secretariat of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Secretariat of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, United Nations Development Programme, United Nations Environment Programme.

12. Non-governmental organizations were represented as observers. The names of those organizations are included in the list of participants (UNEP/POPS/POPRC.6/INF/31).

III. Operational issues

A. Rotation of the membership in May 2012

13. Introducing the sub-item, the representative of the Secretariat summarized the information contained in document UNEP/POPS/POPRC.6/INF/3/Rev.1 on the rotation of the membership of the Committee in May 2012. She noted that the terms of office of 14 members would expire on 4 May 2012 and the Conference of the Parties would need to decide on a list of parties that were to nominate a member to the Committee for a term of office running from 5 May 2012 to 4 May 2016. Each region should therefore be ready to provide, at the fifth meeting of the Conference of the Parties, a list of parties that should nominate new members for their region.

14. The Committee took note of the information.

B. Operating procedures of the Committee

15. Introducing the sub-item, the representative of the Secretariat recalled that at its fourth meeting the Conference of the Parties had considered issues relating to the Committee's operating procedures, including its terms of reference, modalities of decision-making, and preventing and dealing with conflicts of interest relating to its activities. In that regard, the Conference had taken decision SC-4/20, which had led to amendments to the Committee's terms of reference. Those terms of reference and the form for declaring interests had been reproduced in document UNEP/POPS/POPRC.6/INF/4. She explained that the Secretariat was proposing text on the procedure for preventing and dealing with conflicts of interest on the basis of the practice of the Committee introduced in accordance with that decision – text that the Committee might wish to consider inserting in its terms of reference and submitting to the Conference of the Parties at its fifth meeting for its approval.

16. In the ensuing discussion, one member asked whether any conflict of interest would be made public once the Chair of the Committee had consulted the President of the Conference of the Parties and the Executive Secretary of the Secretariat of the Convention with a view to making a decision on the participation of the Committee member in question in the Committee's work regarding a particular chemical. The Chair clarified that, once the matter had been discussed by the Chair, the President and the Executive Secretary, it would be brought back to the Committee as a whole. The nature of the conflict of interest itself would not be made public, however; it would merely be stated that there was a conflict of interest affecting a certain member (who would be named), and that member would not be permitted to take part in decision-making on matters pertaining to the chemical at issue.

17. One member, pointing out that the members were experts appointed by their Governments, asked whether the rules on conflicts of interest came into play if a Government had a specific policy on a chemical under consideration. The current rules appeared to refer only to members who might have economic interests in the chemical at issue, even though Governments could, in theory, seek to

influence the technical decisions to be taken if, for example, they did not wish to ban a substance because of national financial interests in its manufacture and sale.

18. In response, the Chair clarified that the members were government-designated experts in chemicals assessment or management who were appointed by the Conference of the Parties. Their expertise was demonstrated in their curricula vitae. In that regard, the Committee followed transparent procedures based on scientific information to reach its conclusions, always striving for consensus. Members would always be requested to justify their objections, if any, on scientific grounds, and those objections and justifications would be recorded in the report of the meeting. When a draft risk management evaluation was considered, information was gathered from individual countries, and such information could incorporate national positions and social and economic considerations. At that stage, the Committee would simply assess the information provided to check its plausibility and accuracy, without entering into any form of discussion on the merits of the information. It would be up to readers of the evaluation to draw their own conclusions from the information provided.

19. The Senior Legal Officer of the United Nations Environment Programme (UNEP) pointed out that any conflict of interest related to an individual Committee member and not to the Government of that member. Furthermore, as the Conference of the Parties took the final decision in appointing an expert, that expert was accountable to the Conference as an individual expert and not as a representative of the designating Government. Matters of a political nature pertaining to a chemical should be raised by government representatives during meetings of the Conference of the Parties.

20. The Committee adopted decision POPRC-6/1, on conflicts of interest. The decision is set out in annex I to the present report.

C. Standard workplan for the preparation of a draft risk profile and draft risk management evaluation during the intersessional period between the Committee's sixth and seventh meetings

1. Workplan

21. In considering the sub-item, the Committee had before it document UNEP/POPS/POPRC.6/8 on draft workplans for the intersessional period between the Committee's sixth and seventh meetings.

22. Introducing the sub-item, the representative of the Secretariat drew attention to the information contained in the annex to the document.

23. The Committee adopted the workplan for the preparation of a draft risk management evaluation during the intersessional period between the Committee's sixth and seventh meetings, which is set out in annex V to the present report.

2. Intersessional work

24. In adopting its decisions at the meeting, and in accordance with paragraph 6 of article 8 of the Convention and paragraph 29 of the annex to decision SC-1/7 of the Conference of the Parties, the Committee established a number of intersessional ad hoc working groups to carry forward the work of the Committee on various issues. The composition of those groups is set out in annex VI to the present report.

IV. Technical work

A. Work programmes on new persistent organic pollutants as adopted by the Conference of the Parties

25. In considering the sub-item, the Committee had before it a technical paper on brominated diphenyl ethers (UNEP/POPS/POPRC.6/2/Rev.1), supporting material (UNEP/POPS/POPRC.6/INF/6), comments on the technical document and responses to those comments (UNEP/POPS/POPRC.6/INF/7) and information on new persistent organic pollutants gathered pursuant to paragraphs 1–4 of the annex to decision SC-4/19 (UNEP/POPS/POPRC.6/INF/5).

26. Ms. Bettina Hitzfeld (Switzerland), chair of the intersessional working group on new persistent organic pollutants, introduced the sub-item and outlined the work carried out during the intersessional period.

27. The Chair gave an additional introduction, suggesting how the Committee should consider the work before it. Referring to decision SC-4/19, he said that data gaps and ways of filling those gaps should be identified, reports prepared and recommendations on the elimination of the newly listed

persistent organic pollutants, in particular brominated diphenyl ethers, from the waste stream and on risk reduction for perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF) developed and submitted to the Conference of the Parties. As to the substance of those recommendations, it was important to consider what countries could achieve, bearing in mind their varying levels of development. In addition, the concentrations of substances, such as flame retardants, would be diluted through recycling, compounding the problem. It was therefore important to explore short-term, medium-term and long-term solutions early on and continue collecting information.

28. Mr. Alan Watson, consultant to the Secretariat, gave a presentation on the technical paper on the implications of recycling commercial pentabromodiphenyl ethers and octabromodiphenyl ethers. The review described the information-gathering process and included an assessment of operations to recycle and recover articles containing brominated diphenyl ethers, identification of best available techniques and best environmental practices for the recycling of articles containing those chemicals, a review of the long-term environmental desirability of such recycling, identification of knowledge gaps, and assessment of the possible health and environmental impacts of such recycling. In the short term, action could focus on developed countries' handling of primary flame-retarded articles containing higher concentrations of the chemicals in question and on the domestic identification and treatment of those substances in articles for export. Medium-term action could aim to build capacity in developing countries and countries with economies in transition through technology transfer and screening techniques and to issue guidance on best available techniques and best environmental practices. In the long term, efforts could be made to determine where high levels of contamination could present risks to human health and/or the environment and to deal effectively with listed brominated diphenyl ethers.

29. In the ensuing discussion, one member proposed that the transport of the listed brominated diphenyl ethers should be halted, especially from developed countries to developing ones, noting that essential information such as manufacturing dates was often unavailable. In the view of another member, it was important to avoid or reduce the risks presented by new persistent organic pollutants and to assist developing countries in building capacity to increase their knowledge and fill information gaps. A third member advocated taking action as quickly as possible.

30. The Committee agreed to establish a contact group, to be co-chaired by Ms. Hitzfeld and Mr. Jianxin Hu (China), to examine the issue further.

31. Following an initial review of a conference room paper introduced by Ms. Hitzfeld containing a number of recommendations on how to deal with activities pertaining to the new persistent organic pollutants, several members identified potential difficulties with implementation of the recommendations, given some countries' needs for capacity-building and additional expertise in such complex subjects. The Chair clarified that not every country would be expected to implement the recommendations at the same time. The Convention already indicated in Articles 12 and 13, on technical assistance and financial resources and mechanisms, that there were opportunities for, among others, the provision of technical assistance by developed-country parties to developing-country parties and parties with economies in transition.

32. The Committee agreed that a "friends of the Chair" group, chaired by Ms. Hitzfeld, would finalize the draft decisions under consideration.

33. The Committee adopted, as orally amended, decision POPRC-6/2, on the work programmes on new persistent organic pollutants. The decision is set out in annex I to the present report.

34. A digest of the information provided in documents UNEP/POPS/POPRC.6/2/Rev.1, UNEP/POPS/POPRC.6/INF/5 and UNEP/POPS/POPRC.6/INF/6 is contained in annex II to the present report, in the form of key findings and potential gaps identified in information provided by parties and observers on newly listed persistent organic pollutants.

35. At the time of the adoption of the decision, some members recognized the urgent need to work to eliminate persistent organic pollutant brominated diphenyl ethers from the waste stream, noting that consideration should be given to the practical realities of implementing some of the recommendations contained in the decision. Some jurisdictions might be required to examine the feasibility of implementing some screening technologies at recycling and waste management facilities to work effectively towards the elimination of persistent organic pollutant brominated diphenyl ethers from the waste stream. The large variations among waste management infrastructures in developed and developing countries also needed to be considered.

36. The Committee took note of the concerns expressed.

B. Basel Convention technical guidelines on persistent organic pollutants: new persistent organic pollutants

37. In considering the sub-item, the Committee had before it a note by the Secretariat on the Basel Convention technical guidelines on the environmentally sound management of persistent organic pollutants (UNEP/POPS/POPRC.6/3).

38. Introducing the sub-item, the representative of the Secretariat said that, with the addition of the nine new persistent organic pollutants to the Convention, the Committee might wish to recommend the revision of the Basel Convention technical guidelines on the environmentally sound management of persistent organic pollutants to ensure environmentally sound disposal of the new chemicals. It was also suggested that consideration should be given to establishing, if appropriate, concentration levels for the chemicals listed in Annexes A, B and C to the Convention to define the low persistent organic pollutant content.

39. The representative of the Secretariat of the Basel Convention outlined the Convention's draft work programme for 2012–2013, which included the development of technical guidelines on the nine new persistent organic pollutants and updating of the existing guidelines. It was noted that the eleventh meeting of the Conference of the Parties to the Basel Convention would take place after the sixth meeting of the Conference of the Parties to the Stockholm Convention, in 2013, which meant that the Conference of the Parties to the Stockholm Convention would not be able to welcome the technical guidelines until its seventh meeting, in 2015.

40. In the ensuing discussion, at the request of the Chair, an observer provided information on work under way in the European Union to integrate international regulations dealing with persistent organic pollutants into European Union regulations dealing with those pollutants. A study had identified gaps in knowledge regarding how to identify the presence and concentrations of persistent organic pollutants in waste streams and waste products, and a monitoring programme had been established to collect additional data to develop low content levels, with results expected in early 2011.

41. One member described the situation in his country with regard to the nine new persistent organic pollutants, highlighting the difficulties encountered in dealing with those pollutants from a life-cycle perspective. Members suggested that the Committee should cooperate more directly with the appropriate bodies of the Basel Convention, and that the results of related work by the Committee should be provided to the Basel Convention Secretariat.

42. The Committee agreed to establish a small group of friends of the Chair, chaired by Mr. Mohammed Khashashneh (Jordan), to prepare a draft decision on the matter.

43. The Committee adopted decision POPRC-6/3, on updating of the Basel Convention technical guidelines on the environmentally sound management of persistent organic pollutants. The decision is set out in annex I to the present report.

C. Additional consideration of new persistent organic pollutants

44. In considering the sub-item, the Committee had before it a note by the Secretariat on pentachlorobenzene (UNEP/POPS/POPRC.6/INF/21).

45. Introducing the sub-item, the Chair noted that, by its decision SC-4/16, the Conference of the Parties had decided to list pentachlorobenzene in Annexes A and C to the Convention without any specific exemptions. During the intersessional period between the Committee's fifth and sixth meetings, new information related to unintentional formation of pentachlorobenzene had been received. The information was being brought to the Committee's attention so that it might devise a way to deal with new information on listed pollutants in the future.

46. Mr. Roland Weber, consultant to the Secretariat, gave a presentation on pentachlorobenzene releases from the degradation of quintozone and on releases from residuals from chlorinated solvent production.

47. In the ensuing discussion, one member called into question the data regarding her country mentioned in the presentation, suggesting that updated data should be used. Another called for building of capacity to undertake assessments, lest the scale of the problem be underestimated, especially for those countries that might experience difficulty in performing such assessments. A third drew attention to issues related to quintozone.

48. The Chair explained that the Committee could not discuss the information before it in great detail, given that the chemical had already been listed under the Convention and the risk profile that had been drawn up would not be updated to reflect any new information. He therefore suggested that

the information should be forwarded to the Expert Group on Best Available Techniques and Best Environmental Practices for further consideration and that, in the future, other relevant information about pollutants already listed under the Convention should be passed directly to that group by the Secretariat.

49. The Committee requested the Secretariat to draft a decision recommending that the information be passed to the Expert Group on Best Available Techniques and Best Environmental Practices for further consideration.

50. The Committee adopted decision POPRC-6/4, on unintentional releases of newly listed chemicals. The decision is set out in annex I to the present report.

D. Debromination of brominated flame retardants

51. In considering the sub-item, the Committee had before it a note by the Secretariat on the debromination of brominated flame retardants (UNEP/POPS/POPRC.6/INF/20) and a technical paper on bromodiphenyl ethers (UNEP/POPS/POPRC.6/2/Rev.1), as the issue of the debromination of brominated flame retardants was raised in the development of that paper.

52. Introducing the sub-item, the Chair noted that the Committee had discussed the reductive debromination of bromo-aromatics at its fourth meeting, when it had agreed that it should continue to evaluate the emerging information on debromination. At its fourth meeting, the Conference of the Parties had decided to list tetrabromodiphenyl ether and pentabromodiphenyl ether, in addition to hexabromodiphenyl ether and heptabromodiphenyl ether, in Annex A to the Convention, with a specific exemption for recycling of articles in accordance with the provisions of part V and part IV of Annex A to the Convention, respectively. To facilitate the elimination of the listed brominated diphenyl ethers, the Conference of the Parties in its decision SC-4/19, among others, had requested the Secretariat to commission a technical paper on bromodiphenyl ethers. In the development of the technical paper, the issue of the debromination of brominated flame retardants had been raised, with new information made available.

53. Mr. Weber gave a presentation on the debromination of highly brominated diphenyl ethers.

54. In response to an observer's suggestion that, in the light of the relevance of the topic to recycling and the listing of tetrabromodiphenyl ether and pentabromodiphenyl ether, and of hexabromodiphenyl ether and heptabromodiphenyl ether, the Committee would do well to inform the Conference of the Parties of the new information, the Chair said that the Committee required time to assess the information and would have to consider the implications for its discussions of commercial octabromodiphenyl ether. He would therefore be willing to provide information to the Conference of the Parties as part of the report of the meeting, but the time was not ripe for the Committee to take a decision on the matter.

55. The Committee agreed that the debromination of brominated flame retardants would appear on the agenda of its seventh meeting.

E. Intersessional work on substitution and alternatives

56. In considering the sub-item, the Committee had before it a note by the Secretariat providing a summary of intersessional work on substitution and alternatives (UNEP/POPS/POPRC.6/4), a guidance document on alternatives to PFOS and its derivatives developed by the intersessional working group (UNEP/POPS/POPRC.6/INF/8) and comments and responses relating to the draft (UNEP/POPS/POPRC.6/INF/9).

57. Introducing the sub-item, Mr. Samuel Banda (Zambia), chair of the intersessional working group on substitution and alternatives, proposed that, as there were many alternatives and substitutes, all needing study in order to determine their hazardous properties, which would take time, the guidance document should be finalized with the understanding that further suggestions for improvement could be reflected in later versions.

58. In the ensuing discussion on the possible updating of the document, one member cited the need for more information on the toxicology of alternatives and added that some toxicity information would be available by early 2011, meaning that the document could be updated to reflect such information by the time of the Committee's seventh meeting. Another said that new information was already available and that the document could be regarded as a living document, which would be updated periodically. A third suggested that work on alternatives could contribute to the development of the forthcoming recommendation on risk reduction with regard to PFOS and its salts.

59. The Committee, after agreeing that the information contained in the guidance document should be disseminated as soon as possible without precluding the possibility of future updates, considered how best to disseminate the document. An option proposed was the use of a web page with space for posting newly available and unassessed toxicity information on alternatives, with a suitable disclaimer, pending finalization.

60. The Committee agreed to submit to the Conference of the Parties at its fifth meeting the guidance document on alternatives together with a recommendation that the document should be completed with more information. In the meantime, further information on the health and environmental effects of possible alternatives mentioned in the document, together with experience in replacing PFOS with additional alternative products and/or processes would be gathered and posted online.

61. One member emphasized the need to ensure that the information in the guidance document could be understood by a broad audience, including all those who actually used the substances in question. The representative of the Secretariat responded that a mandate of the Conference of the Parties was to increase global awareness of chemicals-related issues, and that the outcomes of the Committee's work would contribute to the Convention's outreach programme.

62. The Committee agreed that Mr. Banda would finalize the draft guidance document, taking into account comments received.

63. The Committee adopted, as orally amended, decision POPRC-6/5, on substitution and alternatives. The decision is set out in annex I to the present report. The revised guidance document on alternatives to PFOS and its derivatives may be found in addendum 3 to the present report (UNEP/POPS/POPRC.6/13/Add.3).

F. Intersessional work on toxic interactions

64. In considering the sub-item, the Committee had before it a summary of intersessional work on toxic interactions (UNEP/POPS/POPRC.6/5), a proposal by the co-chairs of the intersessional working group on toxicological interactions for further work to be undertaken by the Committee (UNEP/POPS/POPRC.6/INF/10) and an executive summary of a study commissioned by the European Commission (UNEP/POPS/POPRC.6/INF/26).

65. Introducing the sub-item, Mr. Ivan Holoubek (Czech Republic), co-chair of the intersessional working group on toxic interactions, gave a presentation on the development of an approach to evaluating exposures to multiple chemicals and toxicological interactions of candidate persistent organic pollutants. He also introduced a study to review current scientific knowledge and regulatory approaches regarding mixture toxicity that had been commissioned by the European Commission and completed in December 2009.

66. In the ensuing discussion, one member noted that, since the publication of the study, the European Union had agreed on recommendations relating to legislation and to exposure to multiple chemicals and multiple endocrine disruptors. Reporting on those recommendations was expected to be completed by early 2012 and the end of 2010, respectively. It was suggested that assessing the human health effects might be easier than assessing ecotoxicological end points, as only one species was being examined from a single trophic level. Responding to a request for clarification, Mr. Holoubek said that the two proposed studies focused on potential exposure, persistent organic pollutants and the methodology.

67. Given that much data were available on multiple exposure, members stressed the need to include relevant information from activities currently under way so as to avoid duplication while focusing on persistent organic pollutants. Furthermore, bearing in mind the short time available before a workshop to be held in the Czech Republic, members suggested that at least a single study should be undertaken on, for example, the effects of multiple exposure to chlorinated paraffins. If funds were available, an additional study could be undertaken using a different methodology and another group of chemicals.

68. The Committee agreed to establish a "friends of the Chair" group, co-chaired by Mr. Holoubek and Ms. Francisca Katagira (United Republic of Tanzania), to develop terms of reference for a study on chlorinated paraffins and the programme of work for the intersessional group.

69. Subsequently, the representative of the Secretariat noted that at its fifth meeting the Committee had considered a document regarding the draft framework of the World Health Organization (WHO) International Programme on Chemical Safety for assessing the combined risk from exposure to multiple chemicals via all relevant routes and pathways. Two studies had been finished, one on

polybrominated diphenyl ethers and the other on carbamates. Further research under way was related to surface water (using the threshold of toxicological concern approach), pharmaceuticals in drinking water and hydrocarbons. She noted that Committee members would be invited to share information at a workshop on risk assessment of combined exposures to multiple chemicals to be held by WHO and OECD in Paris on 15 and 16 February 2011.

70. The Chair said that, from the information provided, it appeared that there would be no overlap between the work of WHO and the Committee on toxic interactions. Accordingly, the Committee requested Mr. Holoubek and Ms. Katagira to prepare a draft decision on the subject.

71. The Committee adopted decision POPRC-6/6, on toxic interactions. The decision is set out in annex I to the present report. The Committee also approved the work programme on toxicological interactions set out in annex IV to the present report.

G. Report on the outcomes of activities undertaken for the effective participation of parties in the Committee's work

72. In considering the sub-item, the Committee had before it an overview by the Secretariat of activities undertaken for effective participation in the Committee's work (UNEP/POPS/POPRC.6/6) and a summary of workshops held in that regard (UNEP/POPS/POPRC.6/INF/11).

73. Ms. Norma Sbarbati Nudelman (Argentina), chair of the intersessional working group on effective participation, gave an overview of the activities undertaken, noting that a regional workshop had been held in Cairo in November 2009 for English-speaking African countries and another in Mexico City in June 2010 for Spanish-speaking countries of Latin America and the Caribbean.

74. In the ensuing discussion, suggestions made included that work undertaken at the regional level should be communicated to those formulating policy and decisions at the national level; that events should be held at the subregional and national levels to inform stakeholders of the results of the workshops; that additional workshops should be held, especially as nine new chemicals had been added to the Convention; and that regional centres should be strengthened to enable them to play an active role in assisting countries to meet their obligations under the Convention.

75. The representative of the Secretariat stressed that, to extend activities from the workshops to the national level, countries should make specific requests – for example, to collect information relevant to the nine new chemicals or to seek assistance in proposing a chemical for listing in the Convention.

76. Members emphasized the importance of receiving feedback in order to assess the effectiveness of workshops, the usefulness of tools such as the pocket guide for effective participation in the Committee's work, and whether target audiences had been reached. It was also suggested that the Committee should make use of the experience of past Committee members through joint national or regional forums. Members proposed incentives to encourage the media to report on issues related to persistent organic pollutants, suggesting that opportunities should be explored to use the regional economic commissions to transmit chemicals-related information.

77. Several members stressed that effective participation by developing-country members was hampered by the continued difficulties faced in gathering national data on persistent organic pollutants, especially with regard to the nine new chemicals. While some information was available on pesticides through national registration schemes, industrial chemicals posed a greater challenge in determining whether a product contained persistent organic pollutants and at what concentration levels. Developing countries lacked the expertise to gather such data, and that lack of capacity was obstructing progress. Some members called for the convening of national meetings or the launching of national campaigns that would increase stakeholders' understanding of issues related to persistent organic pollutants. The importance of effective communication at all levels was also highlighted.

78. The representative of the Secretariat said that the Secretariat was developing an outreach programme that would be presented to the Conference of the Parties at its fifth meeting, and that information and activities relating to the Committee's work were an essential component of that programme. Accordingly, it was crucial for the Secretariat to be as informed as possible about needs, although there needed to be a clear separation between activities to assist parties in their work regarding the Convention and those regarding the Committee. The Secretariat was keen to receive ideas and feedback about its outreach work.

79. The representative of the Global Environment Facility said that the Facility was willing to assist eligible countries in reviewing and updating their national implementation plans for the nine new persistent organic pollutants. It was also expanding its mandate to cover sound chemicals

management and mercury, creating the possibility for discussions about assistance on chemicals proposed for listing as persistent organic pollutants, provided that the assistance requested could fall under the auspices of sound chemicals management.

80. An observer said that her Government was willing, given its experience with candidate chemicals, to assist countries that wished to nominate chemicals as persistent organic pollutants. She suggested that bilateral cooperation should take into account a country's ability (for example, in terms of available expertise) to nominate a chemical. Another observer said that non-governmental organizations were an insufficiently used resource when it came to raising awareness and boosting participation with regard to issues discussed by the Committee. Given that the Convention emphasized a multi-stakeholder approach, she urged countries to involve civil society and non-governmental organizations in work on the new persistent organic pollutants.

81. The Chair recalled that, according to the Convention, a party could obtain assistance from other parties and/or from the Secretariat in submitting proposals for listing chemicals. He welcomed the willingness to provide assistance expressed during the discussion.

82. The Committee requested Ms. Nudelman to develop a draft decision based on decision POPRC-5/4 regarding effective participation and taking into account the Committee's deliberations.

83. The Committee adopted, as orally amended, decision POPRC-6/7, on support for the effective participation of the parties in the Committee's work. The decision is set out in annex I to the present report.

V. Consideration of the draft risk management evaluation on endosulfan

84. In considering the item, the Committee had before it a note by the Secretariat on the draft risk management evaluation on endosulfan (UNEP/POPS/POPRC.6/9), a supporting document for that draft evaluation (UNEP/POPS/POPRC.6/INF/12), comments and responses relating to the draft (UNEP/POPS/POPRC.6/INF/13/Rev.1), an updated draft risk management evaluation (UNEP/POPS/POPRC.6/INF/22), an updated supporting document (UNEP/POPS/POPRC.6/INF/23) and a compilation of information submitted pursuant to Annex F that was relevant to endosulfan (UNEP/POPS/POPRC.6/INF/24).

85. The Committee agreed that, as documents UNEP/POPS/POPRC.6/INF/22 and INF/23 were versions of the draft risk management evaluation and the compilation of comments and responses revised to reflect information submitted by Brazil and the United States of America, it would use those documents as the starting point for its consideration of the chemical.

86. Mr. Ricardo Orlando Barra Ríos (Chile), chair of the intersessional working group established to develop the draft risk management evaluation, gave a presentation on the evaluation. He said that endosulfan, used mainly as crop pesticides and as wood preservatives, had been banned in more than 60 countries; production amounted to some 20,000 tons per year. The evaluation listed international agreements under which the chemical was being considered, national and regional control actions taken in its regard, a cost-benefit analysis and the recommendation that the Conference of the Parties should, in accordance with paragraph 9 of Article 8 of the Convention, consider listing endosulfan in Annex A to the Convention.

87. Representatives of several countries informed the Committee of their Governments' plans regarding endosulfan. The member from Japan said that his country had suspended registration of uses of endosulfan on 29 September 2010. The member from the Republic of Korea said that her country was terminating uses of the chemical on 6 December 2011. The representative of the United States, an observer, said that his country was voluntarily cancelling registrations of endosulfan, with last uses permitted on 31 July 2016. The representative of Brazil, an observer, said that endosulfan had already been banned in some states and would be in all the remaining states by 2013. The Committee agreed that such information should be inserted into the draft risk management evaluation on endosulfan during deliberations in a contact group.

88. The Committee agreed to establish a contact group chaired by Mr. Barra with a mandate to improve and update the risk management evaluation on endosulfan.

89. Subsequently, reporting back to the Committee, Mr. Barra said that the contact group had concluded its work, and that the drafting group had revised the draft risk management evaluation on endosulfan and produced a draft decision, which he introduced to the Committee.

90. In the ensuing discussion, one member voiced her concern regarding the value of the information presented on alternatives, noting that it was drawn from a ranking system developed by the intersessional group that, she said, was based on a lack of information for some risk indicators.
91. The Committee requested the drafting group to revise the draft risk management evaluation on endosulfan on the basis of discussions held during the plenary session.
92. Subsequently, Mr. Barra introduced the revised draft risk management evaluation. At that time, one member voiced her concerns regarding the draft risk management evaluation, which, she said, continued to suffer from procedural and substantive flaws and should therefore be set aside. She said that the Committee had not reviewed the proposal submitted by the European Union at the Committee's third meeting, as it had agreed to suspend consideration of the chemical and to resume such consideration at its fourth meeting. The Committee at its fourth meeting had decided, by voting, that it was satisfied that the screening criteria had been fulfilled. At its fifth meeting, the Committee had adopted the risk profile and the decision to proceed with the proposal, again by voting.
93. She stressed that the information specified in Annex F had been submitted by very few parties and that the information on risk assessment of alternatives was insufficient. Many insecticides suggested as alternatives had high mammalian toxicity and bioaccumulation potential, meaning that a risk analysis of alternatives should be conducted before any conclusion could be reached.
94. Following the member's statement, the Chair clarified that the process followed for each stage of consideration of endosulfan had adhered to the requirements laid down by the Convention and the Conference of the Parties for its subsidiary bodies and that the Committee was required to continue its work and could only cease discussing a chemical if it was so envisaged in the Convention and requested by the Conference of the Parties.
95. In response, some members stressed that the process to develop the draft risk management evaluation had been transparent and the chair of the intersessional working group had done his level best to ensure that the document was balanced and accommodated to the greatest extent possible concerns voiced.
96. Most Committee members who spoke expressed support for the listing of endosulfan in Annex A to the Convention with specific exemptions. The members from Argentina, Cambodia and Zambia, requesting their joint statement to be recorded in the present report, said that they agreed with including endosulfan in Annex A to the Convention with exemptions, after having examined the scientific and technical information, while taking into account that there were no accessible alternatives for some complex pests currently threatening a variety of essential crops, such as rice, corn, cotton and soybeans. They noted, however, that there was a need for financial support for capacity-building and surveying and monitoring of endosulfan, in addition to technical assistance in identifying new potential alternatives and examining their performance under the conditions of use in countries. They called upon the Chair to convey their comments to the Conference of the Parties.
97. One member, considering that all efforts to reach consensus had been exhausted, and according to paragraph 6 (c) of Article 19 of the Convention, proposed that the Committee should move to a vote to adopt the risk management evaluation for endosulfan and to decide whether to recommend to the Conference of the Parties that, in accordance with paragraph 9 of Article 8 of the Convention, it consider listing technical endosulfan (CAS No: 115-29-7), its related isomers (CAS No: 959-98-8 and CAS No: 33213-65-9) and endosulfan sulfate (CAS No: 1031-07-8) in Annex A to the Convention, with specific exemptions.
98. According to paragraph 2 of rule 45 of the rules of procedure, the Committee was required to vote on the holding of a vote to decide on a substantive matter. By a simple majority of 17 votes in favour, 2 against and 10 abstentions, the Committee agreed to move forward on a vote.
99. Accordingly, the Committee moved to a vote. By 24 votes in favour, 0 against and 5 abstentions, the Committee decided to adopt the risk management evaluation for endosulfan and to recommend to the Conference of the Parties, in accordance with paragraph 9 of Article 8 of the Convention, that it consider listing endosulfan in Annex A to the Convention, with specific exemptions.
100. The risk management evaluation on endosulfan adopted by the Committee, as orally amended, can be found in addendum 1 to the present report (UNEP/POPS/POPRC.6/13/Add.1).
101. The Committee adopted decision POPRC-6/8, on endosulfan. The decision is set out in annex I to the present report.

102. At the conclusion of the meeting, one member submitted a note to the Secretariat and provided additional information regarding her position on endosulfan. Her note stated that endosulfan had many inherent properties that made it ideal for crop protection, especially in tropical and subtropical regions. It offered broad-spectrum pest control at a relatively low cost, did not adversely affect many beneficial insects, was a useful tool in managing insecticide resistance and was relatively less toxic to honeybees. Its long-term toxicity profile was well understood, compared to those of newly introduced pesticides. The replacement of endosulfan could involve significant costs in several countries. In her view, the cost-benefit analysis given in the draft risk management evaluation before the Committee had not taken into account a number of implicit costs, such as capacity-building for farmers, the displacement of the labour force and distortion in agricultural production. For a country such as her own, with multiple pest attack scenarios as a result of tropical and subtropical climatic conditions, capacity-building would prove challenging, given that the alternatives suggested were of narrow spectrum.

VI. Consideration of draft risk profiles

A. Hexabromocyclododecane

103. In considering the sub-item, the Committee had before it a draft risk profile on hexabromocyclododecane (UNEP/POPS/POPRC.6/10), comments and responses relating to the draft (UNEP/POPS/POPRC.6/INF/14) and a supporting document (UNEP/POPS/POPRC.6/INF/25).

104. Introducing the sub-item, Mr. Peter Dawson (New Zealand), chair of the intersessional working group on hexabromocyclododecane, gave a presentation on the draft risk profile.

105. In the ensuing discussion, several members and observers expressed appreciation for the presentation and the draft risk profile. One member offered to share some import data on the chemical with the Committee. Another suggested that, in the interests of transparency and facilitated decision-making, additional information of interest to the Committee could be incorporated into formal reports rather than being presented in information documents. He stressed that tables enabled information to be presented in a concise yet comprehensive manner and should include data concerning the risks posed by the use of the chemical, in addition to data both from areas close to the emission sources and from areas far from those sources. One member, however, pointed out that information provided in text form could be kept in context, whereas information presented in tables could not.

106. One observer said that the draft risk profile would be strengthened by incorporating a comparison of exposure levels and toxicity/ecotoxicity data in accordance with the Convention and its annexes, which would contribute to the decision-making process. Another said that there were no benefits to be derived from comparing exposure levels with no-observed-effect levels and, while agreeing with the need for transparency, emphasized that comparisons that were not grounded in science should be avoided. The Chair suggested that benchmarking could be used to overcome some of the problems arising from such comparisons.

107. The member from Finland, speaking as the drafter of the draft risk profile, said that such comparisons had been included in the draft risk profile. Caution was, however, necessary in comparing laboratory studies with field studies. The former, which often focused on short-term, acute effects, were controlled and predictable; field studies, which explored the long-term effects on species in various stages of the life cycle, were influenced by environmental factors.

108. A number of members spoke in favour of accepting the draft risk profile and proceeding to the risk management phase, while one said that there was insufficient evidence to ascertain that hexabromocyclododecane exhibited the characteristics of a persistent organic pollutant. The member from Finland, defending the conclusion of the draft risk profile, said that it was unnecessary to apply the precautionary principle because the risk profile had noted levels of concern. Moreover, he said, it was clear that the chemical had had widespread adverse effects on the environment, and that, even in locations where levels were low, concentrations would eventually build up in the environment and the food chain.

109. The Committee agreed to establish a contact group, chaired by Mr. Dawson, to discuss the issue further.

110. Subsequently, Mr. Dawson reported that, once the contact group had concluded its deliberations, a drafting group had been convened and had met to revise the draft risk profile and, in particular, the text related to the levels and effects of hexabromocyclododecane. One member said

that, while that text was an improvement, it still did not adequately indicate concerns regarding current levels of hexabromocyclododecane in remote regions as required by the Convention.

111. In an effort to reach consensus, the Chair invited additional comments to be submitted in writing to the drafting group.

112. Subsequently, Mr. Dawson reported that several notes had been provided to the drafting group and that, from his perspective, all remaining concerns had been met in the revised document.

113. The Committee adopted, as orally amended, the risk profile on hexabromocyclododecane. The risk profile may be found in addendum 2 to the present report (UNEP/POPS/POPRC.6/13/Add.2).

114. The Committee adopted decision POPRC-6/9 on hexabromocyclododecane, which is set out in annex I to the present report. It agreed to establish an ad hoc working group, chaired by Mr. Dawson, to prepare a risk management evaluation that would include an analysis of possible control measures in accordance with Annex F to the Convention.

B. Short-chained chlorinated paraffins

115. In considering the sub-item, the Committee had before it a revised draft risk profile on short-chained chlorinated paraffins (UNEP/POPS/POPRC.6/11) and a revised supporting document (UNEP/POPS/POPRC.6/INF/15).

116. Introducing the sub-item, Mr. Mohammad Aslam Yadallee (Mauritius), chair of the intersessional working group, summarized the information set out in the draft risk profile, noting that the Committee at its fifth meeting had agreed to consider the draft risk profile at the current meeting and had invited parties and observers to submit supplemental Annex E information. That information had been received and the risk profile revised. He summarized the new data and the conclusions reached.

117. The Chair requested the Committee first to consider whether the document appropriately reflected the new information gathered. An observer provided information in response to a member's request for clarification as to the biodegradability test referred to in the risk profile.

118. The Chair sought opinions on whether the chemical could proceed to the next stage. A number of members said that the time had come to set the chemical aside, with arguments having been exhausted over the course of the Committee's deliberations. One said that the new information supplied would not change the Committee's opinions and findings from previous meetings. Another said that information was inadequate and insufficient to produce a full risk evaluation and that in many places the risk profile referred to local effects, which were irrelevant to the chemical's long-range transport properties. On the basis of the information provided, it could not be said that global action was warranted.

119. One member drew attention to previous substances discussed by the Committee, such as chlordecone and pentachlorobenzene, whose exposure levels were much lower than those found for short-chained chlorinated paraffins. Given the higher exposure in the present case, he suggested that the Committee should find that the chemical was likely, as a result of its long-range environmental transport, to lead to significant adverse effects on human health and/or the environment, such that global action was warranted, and should then move to the next stage.

120. The Chair suggested that the risk profile as currently drafted did not lend itself well to a decision by the Committee to set the chemical aside. He proposed the drafting of text to summarize the concerns of those members who felt that the chemical should not move forward to the next stage, so that the Committee's conclusion would be comprehensible to and accepted by all.

121. In response to that proposal, one member suggested preparing a paper on the environmentally sound management of the chemical, which, he said, would have more use than a paper detailing members' concerns. Such a paper would support the assertion in the risk profile that, given the properties of short-chained chlorinated paraffins, parties should be encouraged to undertake necessary actions to ensure that the manufacture, processing and use of the substance were adequately managed so that low environmental levels were maintained.

122. The Chair welcomed the proposal while noting that, should the Committee decide that the proposal should not proceed, the Committee would, through the Secretariat, make the paper available to all parties and observers. In response, one member agreed to compile the arguments for setting the proposal aside and offered to prepare a paper on the environmentally sound management of the chemical. The Committee's decision to set aside the chemical would be reviewed by the Conference of

the Parties, which would be at liberty to send the proposal back to the Committee for further consideration.

123. The Chair requested an informal meeting with interested members to discuss the matter further. Subsequently, the Committee agreed to convene a “friends of the Chair” group, chaired by Mr. Yadallee, to prepare a proposal on the way forward.

124. The Committee adopted, as orally amended, a proposal on next steps for short-chained chlorinated paraffins, as set out in annex III to the present report.

C. Adverse effects of endosulfan on human health

125. In considering the sub-item, the Committee had before it a note by the Secretariat on the adverse effects of endosulfan on human health (UNEP/POPS/POPRC.6/12).

126. Introducing the sub-item, Mr. Barra recalled that, by its decision POPRC-5/5, the Committee had adopted a risk profile on endosulfan (UNEP/POPS/POPRC.5/10/Add.2). By paragraph 2 of that decision, it had decided to invite the ad hoc working group on endosulfan that had prepared the risk profile to explore any further information on adverse human health effects and, if appropriate, to revise the risk profile for consideration by the Committee at its sixth meeting. Information had since been submitted by the United States, Pesticide Action Network International and the International POPs Elimination Network, and CropLife.

127. The Committee agreed that the contact group chaired by Mr. Barra on endosulfan would also consider the additional information submitted regarding the adverse effects of endosulfan on human health.

128. Subsequently, after the contact group had considered the additional information, Mr. Barra informed the Committee that the group’s general view was that the new information did not change the intent of the current risk profile on endosulfan. The Committee agreed with that view and therefore decided to maintain the document as adopted at the Committee’s fifth meeting (UNEP/POPS/POPRC.5/10/Add.2).

VII. Implementation of paragraphs 3 and 4 of Article 3 of the Stockholm Convention: regulatory and assessment schemes for new and existing pesticides and industrial chemicals

129. In considering the item, the Committee had before it a note by the Secretariat on the implementation of paragraphs 3 and 4 of Article 3 of the Stockholm Convention on regulatory and assessment schemes for new and existing pesticides and industrial chemicals (UNEP/POPS/POPRC.6/7), in addition to information received in response to a questionnaire circulated by the Secretariat (UNEP/POPS/POPRC.6/INF/17/Rev.1).

130. Introducing the item, the representative of the Secretariat said that many countries had set up regulatory schemes relating to pesticides, whereas fewer countries had established legislation governing industrial chemicals.

131. In the ensuing discussion, several members provided information about legislative measures in their countries. On the substance of the document, one member said that the responses could be misleading because of errors made in interpreting some questions included in the questionnaire. In his country’s case, the analyses were inaccurate. He suggested that the form should include an option to leave a blank, rather than the two clear-cut options of “yes” and “no”. Another member also questioned information presented as coming from her country’s submission, while a third indicated that his country had not been listed in the table.

132. The Chair said that the parties would be afforded an opportunity to add further information to the table contained in annex II to document UNEP/POPS/POPRC.6/INF/17/Rev.1, which would be updated in time for the fifth meeting of the Conference of the Parties.

133. The Committee requested the Secretariat to prepare a draft decision on the subject.

134. During discussion of a conference room paper containing the draft decision on the subject, one member asked the Secretariat to send reminders to all parties to elicit information on the implementation of paragraphs 3 and 4 of Article 3 of the Convention and on chemicals occurring as unintentional trace contaminants in products and articles. The Committee took note of the request.

135. The Committee adopted, as orally amended, decision POPRC-6/10, on the implementation of paragraphs 3 and 4 of Article 3 of the Stockholm Convention. The decision is set out in annex I to the present report.

VIII. Other matters

A. Chemicals occurring as unintentional trace contaminants in products and articles

136. Introducing the sub-item, the representative of the Secretariat drew attention to document UNEP/POPS/POPRC.6/INF/19/Rev.1, on information related to quantities of a chemical occurring as unintentional trace contaminants in products and articles, and the responses provided by parties and observers contained in annex II to the document.

137. The representative of the European Commission, referring to a letter written by the Commission to the Committee in February 2010 (as set out in annex I to the document), said that the European Union had set thresholds for the level below which a substance could not be used meaningfully to enable control and enforcement of such thresholds. The Committee's expertise would be useful to define unintentional trace contaminants, since there was no universally accepted definition of the term. In response, the Chair recalled that the Committee had not been mandated to define unintentional trace contaminants. A few members said that the definition of products that were free of persistent organic pollutants should take into account the notion of unintentional trace contaminants.

138. In reply to a member's query, the representative of the European Union said that unintentional trace contaminants included polybrominated diphenyl ethers, found in plastics, and PFOS, which was present in carpets, textiles and electronic equipment.

139. Noting that the compiled information was useful, the Committee agreed that the table in annex II to document UNEP/POPS/POPRC.6/INF/19/Rev.1 should be updated and complemented by additional information to be provided by parties in time for the fifth meeting of the Conference of the Parties.

140. The Committee requested the Secretariat to prepare a draft decision on the subject.

141. The Committee adopted decision POPRC-6/11, on chemicals occurring as unintentional trace contaminants in products and articles. The decision is set out in annex I to the present report.

B. Project on products free of persistent organic pollutants

142. In considering the sub-item, the Committee had before it a draft concept note on a pilot project and programme to highlight products that were free of persistent organic pollutants (UNEP/POPS/POPRC.6/INF/28). The representative of the Secretariat explained that the aim of the initiative, which sought the voluntary participation of private companies, was to draw up a list of products that did not contain any persistent organic pollutants covered by the Convention, to be posted on a dedicated website under the clearing-house mechanism of the Convention and the United Nations Campaign for Responsibility on Hazardous Chemicals and Wastes (known as the "Safe Planet Campaign"). It also aimed to raise stakeholders' awareness of the availability of products that were free of those chemicals, extend the outreach of the Convention by reaching new target groups, such as consumers, and consider substitutions. The results of and recommendations stemming from the initiative would be submitted to the Conference of the Parties at its fifth meeting, where an extension of the pilot phase could be considered.

143. In the ensuing discussion, in reply to one member's questions, the representative of the Secretariat said that the initiative's scope would be limited to the 21 persistent organic pollutants listed under the Convention; that the costs of the pilot phase would be covered by participating companies; and that the project – except for the concept note prepared for the Bureau – had not yet been launched. Turning to another query, he said that the definition of the threshold below which such products were considered free of persistent organic pollutants would apply only in the context of the pilot project and would be set at 2 parts per million. In addition, the main programme might include agricultural chemicals. He added, in response to comments by observers, that the proposal to consider the use of chemical-free alternatives in the interests of sustainable development would be taken into account and an option to link the programme to capacity-building activities for developing countries would be available.

144. The Chair noted the usefulness of such a programme for the Committee's work and for the identification of alternatives to and substitutes for listed persistent organic pollutants. He added, however, that several aspects of such a programme remained to be clarified.

145. The Committee took note of the information.

C. Proposal for an article by the Committee

146. Introducing the sub-item, the Chair noted that the Committee had already held six meetings and had produced substantial outputs in the form of risk profiles, risk management evaluations and other guidance material as listed in the annex to document UNEP/POPS/POPRC.6/INF/18. He therefore proposed that an article could be prepared on the Committee's scientific work for publication in a scientific journal, in order to increase the Committee's visibility. The article's structure could include a section on the Committee's transparency and work processes. The Committee's publications were issued in six languages whenever possible, but the article would appear in English only.

147. In the ensuing discussion, numerous members expressed support for the idea. Several, pointing out that the Committee's work was already being mentioned at international conferences, offered their help in the drafting of the article.

D. Outcomes of the simultaneous extraordinary meetings of the conferences of the parties to the Basel, Rotterdam and Stockholm conventions relevant to the work of the Persistent Organic Pollutants Review Committee

148. Introducing the sub-item, the representative of the Secretariat drew attention to document UNEP/POPS/POPRC.6/INF/16, on the outcomes of the simultaneous extraordinary meetings of the conferences of the parties to the Basel, Rotterdam and Stockholm conventions relevant to the Committee's work. She mentioned information presented to the conferences of the parties on steps taken by the secretariats to implement joint activities on technical and scientific issues. Those included sharing of information on the work of the Rotterdam Convention's Chemical Review Committee, the Stockholm Convention's Persistent Organic Pollutants Review Committee and the Basel Convention's Open-ended Working Group; identification of a formal process for consultation between those bodies; and joint awareness-raising and training workshops regarding the work of the scientific and technical bodies under the conventions to support the participation of experts, national authorities and other relevant national stakeholders in their work.

149. The Committee took note of the information.

E. Climate change and persistent organic pollutants

150. Introducing the sub-item, the representative of the Secretariat drew attention to document UNEP/POPS/POPRC.6/INF/27, on a concept note for a project on climate change and persistent organic pollutants. She said that, to support the work of the global coordination group on issues related to the effects of long-range transport and climate on observed levels of persistent organic pollutants, as referred to in decision SC-4/31, the Secretariat had convened an expert group to review existing information and data on the interlinkages between climate change and persistent organic pollutants from a global perspective. She gave details of a project on climate change and persistent organic pollutants whose goal was to give the scientific community and policymakers a better understanding of the effects of climate change on releases, distribution and exposure scenarios, and effects on human health and the environment of persistent organic pollutants. She noted that the project report would be finalized by the end of November 2010 and submitted to the Conference of the Parties at its fifth meeting.

151. In the ensuing discussion, a number of questions were posed about the content of the project, to which the representative of the Secretariat responded. Several members praised the project, with one drawing attention to problems caused by climate change, such as those related to increased incidence of disease and desertification, and another suggesting that the work should be linked to other initiatives under way to increase its effectiveness.

152. The Committee requested the Secretariat to prepare a draft decision on the subject.

153. The Committee adopted, as orally amended, decision POPRC-6/12, on climate change and persistent organic pollutants. The decision is set out in annex I to the present report.

F. Experience of the paperless meeting

154. Noting that the current meeting was the first to be held in paperless format, the Chair requested members to provide feedback on the experience. Many members spoke in favour of continuing with

that format because of the immediate benefits to the environment. In addition, many noted that the weight of the paper documentation had previously caused problems when travelling. Among suggestions for improvement, some members felt that it would be convenient to have a list of documents for the next day's work on the intranet and that space could be created for contact groups to post their work for the sake of those not included in the groups. One member suggested that the agenda and tentative programme could include hyperlinks to the relevant documents to facilitate navigating between documents. Most members said that any technical problems experienced had been solved swiftly by the Secretariat staff, agreeing that the overall experience had been positive.

IX. Dates and venue of the Committee's seventh meeting

155. The Committee agreed to hold its seventh meeting in Geneva from 10 to 14 October 2011. A meeting of the intersessional working groups would be held on Sunday, 9 October 2011, in English only.

X. Adoption of the report

156. The Committee adopted the present report on the basis of the draft report circulated during the meeting, as orally amended and on the understanding that the Vice-Chair, serving as rapporteur, would be entrusted with its finalization, working in consultation with the Secretariat.

XI. Closure of the meeting

157. Following the customary exchange of courtesies, the Chair declared the meeting closed at 6 p.m. on Friday, 15 October 2010.

Annex I

Decisions adopted by the Persistent Organic Pollutants Review Committee at its sixth meeting

POPRC-6/1: Conflicts of interest

The Persistent Organic Pollutants Review Committee,

Taking note of decision SC-4/20, by which the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants amended the terms of reference of the Persistent Organic Pollutants Review Committee set out in the annex to decision SC-1/7 and the declaration of interests set out in the annex to decision SC-1/8,

Taking into account the experience gained with regard to the procedure for preventing and dealing with conflicts of interest relating to the Committee's activities,

Recommends to the Conference of the Parties that it amend the terms of reference of the Persistent Organic Pollutants Review Committee by inserting a new paragraph after paragraph 15, with the following paragraphs being renumbered accordingly, with the text to read:

“The Committee shall meet in closed session before the start of each meeting of the Committee to discuss any issues related to conflicts of interest of Committee members. Should any conflict of interest of a Committee member arise, the Chair of the Committee shall consult the President of the Conference of the Parties and the Executive Secretary with a view to making a decision on the member's participation in the Committee's work in respect of a particular chemical.”

POPRC-6/2: Work programmes on new persistent organic pollutants

The Persistent Organic Pollutants Review Committee,

Taking note of decisions SC-4/10–SC-4/18, by which the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants amended Annexes A, B and C to the Convention to list nine new chemicals therein,

Recalling decision SC-4/19, by which the Conference of the Parties established indicative elements of a work programme to provide guidance to the parties on how best to eliminate listed brominated diphenyl ethers, and to restrict or eliminate perfluorooctane sulfonic acid (PFOS) and its salts, perfluorooctane sulfonyl fluoride (PFOSF) and other chemicals listed in Annex A or B to the Convention at the fourth meeting of the Conference of the Parties,

Mindful of the importance of providing guidance on the elimination of listed brominated diphenyl ethers and the restriction or elimination of PFOS and its salts, PFOSF and other chemicals listed in the annexes to the Convention,

Noting that the following work has been undertaken in accordance with the work programme outlined in decision SC-4/19:

- (a) Parties and observers have submitted information on brominated diphenyl ethers, PFOS, its salts and PFOSF and other chemicals newly listed in Annex A or B to the Convention at the fourth meeting of the Conference of the Parties as requested in paragraphs 1 (a)–(c) of the annex to decision SC-4/19 and on the basis of a questionnaire developed by the Committee at its fifth meeting;
- (b) The Secretariat has gathered and compiled the submitted information, made it available on the website of the Convention and summarized it;¹
- (c) The Committee has at its fifth meeting developed terms of reference for a technical paper with the following objectives:
 - (i) To assess the possible health and environmental impacts of recycling articles containing brominated diphenyl ethers;

1 UNEP/POPS/POPRC.6/INF/5 and UNEP/POPS/POPRC.6/13, annex II.

- (ii) To review the long-term environmental desirability of the recycling of articles containing brominated diphenyl ethers;
- (iii) To identify the best available technology and best environmental practices for the recycling of articles containing brominated diphenyl ethers;
- (d) The draft technical paper has been prepared and submitted to the Committee at its sixth meeting,²

Having reviewed the information provided by parties and observers on the chemicals newly listed in Annexes A and/or B to the Convention and in the draft technical paper,

Having identified potential gaps in the information provided by parties pursuant to paragraphs 1–4 of decision SC-4/19,

Recognizing that the rendering of timely and appropriate technical assistance in response to requests from developing-country parties and parties with economies in transition is essential for the implementation of the recommendations set out in the annex to the present decision,

Decides that the recommendations on how to fill the identified information gaps and the recommendations on the elimination of brominated diphenyl ethers from the waste stream and on risk reduction for PFOS, its salts and PFOSF as contained in the annex to the present decision should be submitted to the Conference of the Parties at its fifth meeting for its consideration.

Annex to decision POPRC-6/2

Recommendations on the elimination of brominated diphenyl ethers from the waste stream and on risk reduction for perfluorooctane sulfonic acid (PFOS) and its salts and perfluorooctane sulfonyl fluoride (PFOSF)

I. Recommendation on the elimination of brominated diphenyl ethers from the waste stream

1. The Committee reviewed the information provided by parties and observers on newly listed persistent organic pollutants and in the draft technical paper. On the basis of this information, the Committee identified potential gaps in the information and developed recommendations on the elimination of brominated diphenyl ethers from the waste stream, including on how to fill the information gaps identified.

A. Overall recommendation

2. The objective is to eliminate brominated diphenyl ethers from the recycling streams as swiftly as possible. To meet this objective, the principal recommendation is to separate articles containing brominated diphenyl ethers as soon as possible before recycling. Failure to do so will inevitably result in wider human and environmental contamination and the dispersal of brominated diphenyl ethers into matrices from which recovery is not technically or economically feasible and in the loss of the long-term credibility of recycling. Initially, the main focus should be on developed countries handling primary flame-retarded³ articles containing higher concentrations of brominated diphenyl ethers and attention should be paid to identification and treatment of brominated diphenyl ethers in articles for both domestic use and for export.

3. Time is short because articles containing brominated diphenyl ethers are already present in many existing waste streams as a result of the time frame of former production of these articles. Brominated diphenyl ethers should not be diluted since this would not reduce the overall quantity in the environment. In some cases, it is likely that the quantities in waste have reduced significantly from their peak concentration levels.

4. To prevent similar difficulties with other substances, parties should step up efforts to regulate chemicals with the aim of preventing the production and use of chemicals that exhibit the characteristics of persistent organic pollutants in compliance with paragraphs 3 and 4 of Article 3 of the Stockholm Convention.

² UNEP/POPS/POPRC.6/2/Rev.1.

³ That is articles for which the flame retardant content was added for the purposes of flame retardancy rather than articles which contain some flame retardant as a consequence of contaminants in recycle.

B. Recommendations for short-term activities

5. The key recommendation for the short-term in countries in a position to do so, especially developed countries, is to establish and apply screening techniques and to separate materials containing brominated diphenyl ethers in order to stop these materials from being recycled. In detail, the recommendations are:

- To begin establishing national control schemes for recycling of waste potentially containing brominated diphenyl ethers and to implement effective screening and separation techniques for material containing brominated diphenyl ethers.
- Following the implementation of effective screening and separation techniques, to stop the recycling of articles containing brominated diphenyl ethers.
- To store in a safe manner materials and articles containing brominated diphenyl ethers when screening and separation techniques are not readily available.
- To stop the export of waste materials containing brominated diphenyl ethers except for the purpose of environmentally sound disposal in the importing country as set forth in paragraph 1 (d) of Article 6 of the Stockholm Convention.
- To alert, equip and train the relevant authorities (for example, Customs and border control authorities) to allow them to control, identify and, where necessary, intercept shipments of wastes containing brominated diphenyl ethers.
- To generate and collect information on releases of brominated diphenyl ethers and unintentionally produced brominated organic compounds such as polybrominated dibenzodioxins and polybrominated dibenzofurans (PBDD/PBDF) in emissions to air and in the solid residues from thermal processes used in treating materials contaminated with brominated diphenyl ethers.
- To identify disposal options that would comply with the Stockholm Convention guidelines to be developed for the destruction of wastes containing brominated diphenyl ethers. These may include best available technique incinerators with effective primary and secondary combustion zones that operate under best environmental practice conditions with continuous monitoring and sampling to ensure that brominated diphenyl ethers and/or PBDD/PBDF are not released.
- To collect information relevant to the establishment of best available techniques and best environmental practices for treatment and disposal techniques for materials containing brominated diphenyl ethers.
- To assess occupational exposures of staff working in facilities where articles and wastes potentially containing brominated diphenyl ethers are stored, sorted, treated, recycled, recovered or disposed of. Appropriate precautions should be taken to minimize any occupational exposure.⁴

6. Additional short-term goals could include:

- To endeavour to promote the commercialization of separation techniques, which have already been evaluated in trial plants or which have yet to be developed, for removing brominated diphenyl ethers from plastic matrices to permit continued recycling.
- To develop a system or mechanism to prevent the entry of substances that exhibit characteristics of persistent organic pollutants into the recycling stream as soon as they are identified.
- To promote and facilitate public awareness-raising on the potential harm of materials containing polybrominated diphenyl ethers currently in use (e.g., furniture, mattresses or carpet with recycled back-coating containing polybrominated diphenyl ethers).

7. Since the presence of brominated diphenyl ethers is less well characterized in developing countries and countries with economies in transition it is further recommended:

⁴ International Labour Organization Convention concerning Safety in the use of Chemicals at Work, No. C170, 1990 and ILO Recommendation Concerning Safety in the Use of Chemicals at Work, No. R177, 1990.

- To exchange information on and experiences of successful environmentally sound handling, management and disposal of articles and wastes containing brominated diphenyl ethers.
- To encourage developed countries to promote the transfer to developing countries of screening and separation techniques.
- To undertake a more detailed survey in representative countries in each region to determine the extent of brominated diphenyl ethers in recycling and waste streams. This should be supported by capacity-building efforts and measures to raise the awareness of all stakeholders.

C. Recommendations for medium-term activities

- To promote and implement analytical techniques and technologies specific to brominated diphenyl ethers.
- To improve and extend as necessary disposal options to ensure compliance with Stockholm Convention obligations and guidelines, taking into account the relevant decisions of the Persistent Organic Pollutants Review Committee on the updating of the Basel Convention technical guidelines on the environmentally sound management of persistent organic pollutants.
- To evaluate surveys conducted in developing countries and countries with economies in transition and apply their conclusions, where appropriate, to other countries with similar waste streams. If the survey indicates a significant presence of materials containing brominated diphenyl ethers, screening techniques should be implemented.
- To undertake further assessment and produce best available technique and best environmental practice guidance. These tasks should be undertaken by the Stockholm Convention's expert bodies and include consideration of polybrominated diphenyl ethers and PBDD/PBDF releases from smelters and other thermal recovery technologies, including secondary metal industries, cement kilns and feedstock recycling technologies.

8. The main recommendations in respect of deposition of and deposited polybrominated diphenyl ethers in landfills are:

- To assess further the long-term chemistry of polybrominated diphenyl ethers in landfill sites and the fate and risk of polybrominated diphenyl ether release from landfills into the environment.
- To reduce releases of polybrominated diphenyl ethers from landfills by avoiding the landfilling of materials containing them. Significant reductions can be made by restricting the landfill disposal of waste streams with high concentrations of brominated diphenyl ethers. This does not, however, need to apply to the landfill sites in which proper management is applied to isolate the landfill contents from the environment.
- To assess and determine any necessary remediation measures in landfills. In some cases (such as sites vulnerable to erosion, those which are below the water table or vulnerable to flooding) this may even require the removal of materials containing polybrominated diphenyl ethers from landfills for further destruction.

D. Recommendations for long-term activities

- To prioritize for remediation activities landfills, sediments and production, manufacturing and treatment sites that present significant risks to human health and/or the environment.
- To evaluate surveys conducted in developing countries and countries with economies in transition and apply their conclusions, where appropriate, to other countries with similar waste streams. If the survey indicates a significant presence of materials containing brominated diphenyl ethers, provisions for technology transfer should be implemented.

II. Recommendations on risk reduction for PFOS, its salts and PFOSF

9. The Committee reviewed the information provided by parties and observers on newly listed persistent organic pollutants. On the basis of this information, the Committee identified potential gaps in the information and developed recommendations on the risk reduction for PFOS, its salts and PFOSF, including on how to fill the information gaps identified.

10. The recommendations on risk reduction measures are given in chronological order of the life cycle of PFOS and processes and materials containing PFOS to address systematically the related risks. The recommendations are provided in a short-term, medium-term and long-term framework. A number apply to both the production and usage of PFOS in various applications. Given that PFOS precursors may contribute to the overall presence of PFOS in the environment, the recommendations below consider, as appropriate, the management of PFOS and PFOS-related chemicals.

11. Countries in a position to do so, especially developed countries, are encouraged to take up these recommendations as soon as possible and exchange their experiences and success stories with other countries. The transfer of knowledge and technology, including capacity-building to identify PFOS in articles and applications and monitor PFOS in the environment, should be promoted to support full participation in global efforts to reduce PFOS risks.

A. Recommendations with regard to PFOS production and industrial use

Short term

- To use best available technique and best environmental practice destruction technologies for wastes containing PFOS in current production and industrial uses of PFOS. No landfilling of these wastes should be permitted, unless leachate containing PFOS is properly treated.
- To ensure safe storage when destruction technologies are not readily available.
- To launch urgent investigations into landfills where waste from PFOS producers or from PFOS industrial users (paper, carpet, textile, chromium plating and other industries having used PFOS) are deposited. Drinking water from reservoirs and wells in the vicinity of these landfills and also around the PFOS production and user areas should be analysed.
- To assess industries' current and historical practices in managing sludge. If contaminated sludge has been applied as a biosolid to agricultural areas or other soils, such practices should be stopped.
- To monitor rivers and lakes and, in particular, the fish in the lakes and rivers close to landfills and production and industrial use areas. Depending on the PFOS levels in fish, an advisory board for fish consumption should be established.
- To monitor occupational exposure at production and industrial use facilities and to implement appropriate occupational health and safety measures.

Medium term

- If contamination has occurred, to carry out remediation activities in accordance with the polluter-pays principle to reduce risk.
- For recording remediation technologies, strategies and associated damages, to document the cost of management and remediation, including the related cost of not using drinking water wells and of restricting fishing. Such information should be included, as appropriate, in the national implementation plan and/or reports submitted under Article 15 of the Stockholm Convention.

B. Recommendation on risk reduction from PFOS use

12. Taking into account the information contained in the guidance document on alternatives to PFOS and its derivatives and additional information provided thereafter:

Short term

- To withdraw or cease open applications (e.g., in impregnated/surface modified paper, insecticides, chemically driven oil production, carpet, textile, leather, furniture, detergents).
- To identify and implement alternatives in open applications under acceptable purposes (fire-fighting foam and ant baits). For a range of other acceptable-purpose applications, alternatives are used in developed countries and appear available in practice.
- If using PFOS in industrial applications, to do so in closed-loop systems. Releases of PFOS from industrial processes should be retained by best available technique and best environmental practice treatment technologies. Resulting sludge, adsorbents and wastes containing PFOS should be destroyed and not deposited.
- To continue to gather information on experiences of using PFOS alternatives in the areas of acceptable purposes and specific exemptions. This information should be compiled to support the work of the Conference of the Parties in evaluating the continued need for these chemicals.
- To assess the toxicity and ecotoxicity of alternatives to PFOS.

C. Recommendation on risk reduction for PFOS in existing stocks**Short term**

- To identify and cease using stocks containing PFOS (fire-fighting foams, carpets and others). Such stocks should be collected and stored.
- To raise awareness of the environmental and human health effects of PFOS, providing training for relevant professionals in how to handle collection, storage and disposal of PFOS.

Medium term

- To develop and implement strategies to destroy stocks containing PFOS.

D. Recommendation on risk reduction for recycling of articles containing PFOS**Short term**

- To make parties aware that the use of carpets containing PFOS in applications other than those for which they were originally intended, such as in gardening, may lead to releases.
- To cease the recycling of carpets containing PFOS.

E. Recommendation on risk reduction from PFOS in consumer products deposited in municipal landfills**Short term**

- To cease deposition of materials identified as containing PFOS (in particular carpets, furniture and textiles) in landfills and to store them to await proper destruction.

Medium term and long term

- To assess the extent to which PFOS releases occur in the recycling of paper, textiles and impregnated furniture.
- To assess whether other material recycling streams are affected by materials containing PFOS.
- To monitor releases of PFOS, among other contaminants, from municipal landfills. Monitoring should also be undertaken of the groundwater, surface water and biota that could be affected by releases from landfills.

- When releases are discovered, to apply appropriate measures, including leachate control.

F. Recommendations on risk reduction from releases from contaminated sites

Short term

- To establish and implement a strategy for identifying and monitoring sites contaminated with PFOS in accordance with Article 6 of the Convention.

Medium and long term

- To gather information on remediation technologies for sites contaminated with PFOS.
- To encourage the exchange of information and country experiences on sound management and remediation of contaminated sites.
- To take action to remediate sites contaminated with PFOS.

POPRC-6/3: Updating of the Basel Convention technical guidelines on the environmentally sound management of persistent organic pollutants

The Persistent Organic Pollutants Review Committee

1. *Recommends* that, with regard to the chemicals newly listed in Annexes A, B and C to the Stockholm Convention on Persistent Organic Pollutants by amendments to the Convention, the Conference of the Parties to the Stockholm Convention invite the appropriate bodies of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal:

- To establish the levels of destruction and irreversible transformation of these chemicals necessary to ensure that the characteristics of persistent organic pollutants as specified in paragraph 1 of Annex D to the Stockholm Convention are not exhibited;
- To determine what they consider to be the methods that constitute environmentally sound disposal referred to in paragraph 1 (d) (ii) of Article 6 of the Stockholm Convention;
- To work to establish, as appropriate, the concentration levels of these chemicals in order to define the low persistent organic pollutant content referred to in paragraph 1 (d) (ii) of Article 6 of the Convention;

2. *Also recommends* that the Conference of the Parties to the Stockholm Convention make the following documents available to the appropriate bodies of the Basel Convention to support their work:

- The technical paper developed in accordance with paragraph 3 of the annex to decision SC-4/19;⁵
- The information gathered in accordance with paragraph 1 of the annex to decision SC-4/19;⁶
- The recommendations of the Persistent Organic Pollutants Review Committee on the elimination of brominated diphenyl ethers from the waste stream and on risk reduction for perfluorooctane sulfonate, its salts and perfluorooctane sulfonyl fluoride prepared in accordance with paragraph 5 (c) of the annex to decision SC-4/19;⁷

3. *Further recommends* that the Conference of the Parties to the Stockholm Convention invite the Conference of the Parties to the Basel Convention to consider the involvement of members of the Persistent Organic Pollutants Review Committee in the work referred to in paragraph 1 above, including the updating of the general technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants.

5 UNEP/POPS/POPRC.6/2/Rev.1.

6 UNEP/POPS/POPRC.6/INF/5.

7 UNEP/POPS/POPRC.6/13, annex I, decision POPRC-6/2.

POPRC-6/4: Unintentional releases of newly listed chemicals

The Persistent Organic Pollutants Review Committee,

Noting decision SC-4/16, by which the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants amended Annexes A and C to the Convention to list pentachlorobenzene therein,

Taking note of the new information on unintentional releases of pentachlorobenzene provided to it,⁸

Taking into account that a procedure for updating the guidelines on best available techniques and best environmental practices will be considered at the fifth meeting of the Conference of the Parties and that the Conference may establish an expert group on best available techniques and best environmental practices,

1. *Decides* to forward the new information for consideration to the expert group on best available techniques and best environmental practices, should such a group be established by the Conference of the Parties;

2. *Requests* the Secretariat to forward further relevant information to that expert group.

POPRC-6/5: Substitution and alternatives

The Persistent Organic Pollutants Review Committee

1. *Endorses* the revised guidance document on alternatives to perfluorooctane sulfonate and its derivatives⁹ and invites parties and observers to disseminate and make use of that document;

2. *Agrees* that the guidance document should be revised regularly as necessary to take into account available information on alternatives to perfluorooctane sulfonate and its derivatives;

3. *Invites* parties and observers to submit the following information to the Secretariat of the Stockholm Convention on Persistent Organic Pollutants by 31 July 2011 for consideration at the Committee's seventh meeting:

(a) Comments on the guidance document, including additional information on the health and environmental effects of possible alternatives mentioned in the document;

(b) Experience in replacing perfluorooctane sulfonate and its derivatives with additional alternative products and/or processes, including information about their health and environmental effects;

4. *Requests* the Secretariat to disseminate the guidance document widely, including by posting it on the website of the Stockholm Convention;

5. *Decides* to consider the information provided pursuant to paragraph 3 above and the possibility of initiating the updating of the guidance document at the Committee's seventh meeting.

POPRC-6/6: Toxic interactions

The Persistent Organic Pollutants Review Committee,

Recalling that, in its evaluation of whether a chemical is likely, as a result of its long-range environmental transport, to lead to significant adverse effects on human health and/or the environment such that global action is warranted, the Committee may include in an Annex E risk profile a hazard assessment for the endpoint or endpoints of concern, including a consideration of toxicological interactions involving multiple chemicals,

Recognizing that knowledge of toxic interactions enables the Committee to understand better the potential risk of complex environmental mixtures of persistent organic pollutants,

Recognizing also the advantage of the synergy offered by collaboration between the Committee and the World Health Organization International Programme on Chemical Safety in assessing the risk posed by exposure to multiple chemicals via all relevant routes and pathways,

8 UNEP/POPS/POPRC.6/INF/21.

9 UNEP/POPS/POPRC.6/13/Add.3.

Taking note of the relevant information provided,¹⁰

1. *Approves* the work programme on toxicological interactions;¹¹
2. *Requests* the intersessional working group on toxicological interactions, with support from the Secretariat of the Stockholm Convention on Persistent Organic Pollutants, to undertake the work programme;
3. *Decides* to provide input through the work programme to the framework to assess the risks of combined exposures to multiple chemicals developed by the World Health Organization International Programme on Chemical Safety;
4. *Requests* the Secretariat to identify the resources needed to undertake the activities contemplated in the present decision;
5. *Invites* parties in a position to do so and the donor community to provide financial assistance to this initiative.

POPRC-6/7: Support for the effective participation of the parties in the Committee's work

The Persistent Organic Pollutants Review Committee,

Recalling that, at its fourth meeting, the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants requested the Secretariat of the Convention to continue work to support and strengthen the capacity of developing-country parties or parties with economies in transition to participate fully in the Committee's work,

Noting that the following activities have been implemented:

- (a) Publication of the pocket guide, a concise version of the handbook for effective participation in the work of the Persistent Organic Pollutants Review Committee, in the six official languages of the United Nations;
- (b) Organization of two regional workshops jointly with the secretariat of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, in Cairo and Mexico City in November 2009 and June 2010 respectively, to bring together the members of the Persistent Organic Pollutants Review Committee and those of the Chemical Review Committee,
 1. *Invites* the Secretariat of the Stockholm Convention to continue its activities related to providing support for the effective participation of the parties in the Committee's work, subject to the availability of resources, including:
 - (a) Enhancement of the capacity of developing-country parties and parties with economies in transition to identify and develop a national-level knowledge base on candidate and potential persistent organic pollutants;
 - (b) Support, in collaboration with interested parties, in proposing chemicals for listing under the Convention, including, for example, assistance in developing the proposal and assessing data;
 - (c) Development of tools to evaluate the impact of the activities undertaken to support the effective participation of the parties in the Committee's work, including, for example, the development of questionnaires;
 - (d) Organization of regional and national workshops to improve access to technical and scientific information, including, for example, provision of curricula with practical case studies that allow and encourage replicability;
 2. *Encourages* past and present Committee members to disseminate information about the Committee's work and share their expert knowledge at the national and subregional levels through, for example, regional centres, regional networks and reporting at relevant workshops;

¹⁰ UNEP/POPS/POPRC.6/INF/10.

¹¹ UNEP/POPS/POPRC.6/13, annex IV.

3. *Invites* the Secretariat to enhance the United Nations Campaign for Responsibility on Hazardous Chemicals and Wastes so that it reaches all stakeholders, including the general public and young people, to increase their awareness of issues related to chemicals which might be identified as persistent organic pollutants;

4. *Requests* the Secretariat to disseminate guidance documents such as those on substitutes and alternatives;

5. *Invites* parties and observers in a position to do so to contribute to the Committee's work and to provide financial support for the implementation of activities in support of effective participation by parties in that work.

POPRC-6/8: Endosulfan

The Persistent Organic Pollutants Review Committee,

Having concluded in decision POPRC-4/5 that endosulfan fulfils the criteria in Annex D to the Stockholm Convention on Persistent Organic Pollutants,

Having evaluated the risk profile for endosulfan adopted by the Committee at its fifth meeting,¹²

Having decided in decision POPRC-5/5, in accordance with paragraph 7 (a) of Article 8 of the Convention and taking into account that a lack of full scientific certainty should not prevent a proposal from proceeding, that endosulfan is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted,

Having completed the risk management evaluation for endosulfan in accordance with paragraph 7 (a) of Article 8 of the Convention,

1. *Adopts* the risk management evaluation for endosulfan;¹³

2. *Decides*, in accordance with paragraph 9 of Article 8 of the Convention, to recommend to the Conference of the Parties that it consider listing technical endosulfan (CAS No: 115-29-7), its related isomers (CAS No: 959-98-8 and CAS No: 33213-65-9) and endosulfan sulfate (CAS No: 1031-07-8) in Annex A to the Convention, with specific exemptions.

POPRC-6/9: Hexabromocyclododecane

The Persistent Organic Pollutants Review Committee,

Having completed an evaluation of the proposal by Norway to list hexabromocyclododecane in the annexes to the Stockholm Convention on Persistent Organic Pollutants, and having decided at its fifth meeting, by decision POPRC-5/6, that the proposal meets the criteria set out in Annex D to the Convention,

Having also completed the risk profile for hexabromocyclododecane in accordance with paragraph 6 of Article 8 of the Convention,

1. *Adopts* the risk profile for hexabromocyclododecane;¹⁴

2. *Decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention, that hexabromocyclododecane is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted;

3. *Also decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties, to establish an ad hoc working group to prepare a risk management evaluation that includes an analysis of possible control measures for hexabromocyclododecane in accordance with Annex F to the Convention;

4. *Invites*, in accordance with paragraph 7 (a) of Article 8 of the Convention, parties and observers to submit to the Secretariat the information specified in Annex F before 8 January 2011.

12 UNEP/POPS/POPRC.5/10/Add.2.

13 UNEP/POPS/POPRC.6/13/Add.1.

14 UNEP/POPS/POPRC.6/13/Add.2.

POPRC-6/10: Implementation of paragraphs 3 and 4 of Article 3 of the Stockholm Convention

The Persistent Organic Pollutants Review Committee,

Noting that paragraph 3 of Article 3 of the Stockholm Convention on Persistent Organic Pollutants requires those parties that have regulatory and assessment schemes for new pesticides or new industrial chemicals to take measures to regulate with the aim of preventing the production and use of new pesticides or new industrial chemicals which, taking into consideration the criteria contained in paragraph 1 of Annex D, exhibit the characteristics of persistent organic pollutants,

Noting also that paragraph 4 of Article 3 requires those parties that have regulatory and assessment schemes for pesticides or industrial chemicals, to take into consideration within these schemes, where appropriate, the criteria contained in paragraph 1 of Annex D to the Convention when assessing pesticides or industrial chemicals currently in use,

Recognizing that the compilation of information related to the implementation of those provisions by the parties¹⁵ could be further updated and complemented by additional information,

Recognizing also the usefulness of this information for the implementation of the Convention,

1. *Requests* the Secretariat to update the compilation of information with additional information to be provided by parties and observers before 31 December 2010;
2. *Also requests* the Secretariat to submit the updated information to the Conference of the Parties to the Stockholm Convention at its fifth meeting.

POPRC-6/11: Chemicals occurring as unintentional trace contaminants in products and articles

The Persistent Organic Pollutants Review Committee,

Noting that, pursuant to note (i) of part I of Annexes A and B to the Stockholm Convention on Persistent Organic Pollutants, quantities of a chemical occurring as unintentional trace contaminants in products and articles shall not be considered for listing in Annexes A and B to the Convention,

Recognizing that the compilation of information related to national regulations on unintentional trace contaminants in products and articles¹⁶ could be further updated and complemented with additional information,

Recognizing also the usefulness of this information for the implementation of the Convention,

1. *Requests* the Secretariat to update the compilation of information with additional information to be provided by parties and observers before 31 December 2010;
2. *Also requests* the Secretariat to submit the updated information to the Conference of the Parties to the Stockholm Convention at its fifth meeting.

POPRC-6/12: Climate change and persistent organic pollutants

The Persistent Organic Pollutants Review Committee,

Taking into account the information¹⁷ provided on the initiative by the Secretariat of the Stockholm Convention on Persistent Organic Pollutants to review the interlinkages between climate change and persistent organic pollutants in support of the work of the coordination group of the global monitoring plan on persistent organic pollutants,

Noting the outcome of the study by the expert group on climate change and persistent organic pollutants convened by the Secretariat,

Invites the Conference of the Parties to forward the outcome of the study by the expert group to the Committee for further consideration of the study's possible implications for the Committee's work.

15 UNEP/POPS/POPRC.6/INF/17/Rev.1.

16 UNEP/POPS/POPRC.6/INF/19/Rev.1.

17 UNEP/POPS/POPRC.6/INF/27.

Annex II

Key findings and potential gaps identified in information provided by parties and observers and other relevant information on newly listed persistent organic pollutants

The present annex has been prepared by the Secretariat based on the information compiled in accordance with the annex to decision SC-4/19.¹⁸ It summarizes key findings and potential gaps identified in the information submitted and in other relevant sources, including scientific literature. Detailed information on brominated diphenyl ethers found in such sources has been integrated in the technical review on brominated diphenyl ethers¹⁹ and its associated appendices.²⁰

I. Information on brominated diphenyl ethers found in the scientific literature

A. Key findings relevant to brominated diphenyl ethers

1. Thirty-four countries responded to the request for information on brominated diphenyl ethers (Algeria, Austria, Brazil, Bulgaria, Canada, Costa Rica, Côte d'Ivoire, the Czech Republic, Estonia, Germany, Honduras, Iceland, Indonesia, Japan, Lithuania, Mauritius, Monaco, Morocco, Mozambique, the Netherlands, New Zealand, Norway, Peru, the Republic of Korea, the Republic of Moldova, Romania, Serbia, Sierra Leone, Sweden, Switzerland, Trinidad and Tobago, Ukraine, Uruguay and the United States). Some of these countries reported that they had no relevant information.

2. The level of detail in the information submitted varies considerably. In summary, the following information was provided:

(a) *Manufacture and use of articles containing listed bromodiphenyl ethers:* eight countries responded that articles containing listed bromodiphenyl ethers were previously manufactured in their territories. Fifteen responded that they had no relevant information;

(b) *Types and quantities of articles containing brominated diphenyl ethers, including concentrations of those substances in the articles, including recycled articles:*

- (i) Information was limited;
- (ii) Austria reported data on the levels of brominated diphenyl ethers in recycling operations that included decabromodiphenyl ether and was not specific to the listed bromodiphenyl ethers;
- (iii) A market survey carried out in Switzerland in 2008 concluded that no articles containing commercial pentabromodiphenyl ether, and only very few articles containing commercial octabromodiphenyl ether, were on the market;
- (iv) New Zealand supplied a detailed report based on an X-ray fluorescence spectrometry assessment of the quantity of bromine-containing products in the country;

(c) *Types of articles recycled, extent of recycling, types of articles produced from recycling, options for the environmental management of recycling operations and releases or potential releases resulting from recycling operations:* Canada reported that new articles were recycled from articles that might contain listed bromodiphenyl ethers. Two manufacturers were aware that their recycled carpet padding consisting of flexible polyurethane rebond foam might contain listed bromodiphenyl ethers;

(d) *Cost-effectiveness of different management options and options for environmentally sound disposal:*

18 UNEP/POPS/POPRC.6/INF/5.

19 UNEP/POPS/POPRC.6/2/Rev.2.

20 UNEP/POPS/POPRC.6/INF/6.

- (i) Options for environmentally sound disposal reported by the Czech Republic included secured landfills, hazardous waste incineration, non-hazardous waste incineration, environmentally sound remediation, base catalysed decomposition and thermal desorption by authorized facilities. Austria commented that plastics containing brominated diphenyl ethers were incinerated because landfilling was not allowed. New Zealand suggested secured landfilling;
 - (ii) No information was provided on the cost effectiveness of different management options.
- (e) *Methods for identifying the presence and levels of brominated diphenyl ethers in articles:* Many countries reported using gas chromatography-mass spectrometry (GC/MS), including Germany's "Standard measurement method for the determination of polybrominated flame retardants (pentabromodiphenyl ether, octabromodiphenyl ether) in products".²¹ Austria specified hot solvent extraction with cyclohexane for analysis by GC/MS. The Czech Republic indicated United States Environmental Protection Agency Method 1614 using a high resolution gas chromatograph/high resolution mass spectrometer (HRGC/HRMS). Estonia, the Netherlands, New Zealand, Norway, Serbia, Sweden and Switzerland referred to X-ray fluorescence spectrometry;
- (f) *Identification of, and remediation methods for, contaminated sites pursuant to subparagraph 1 (e) of Article 6 of the Convention:* the Czech Republic reported that an inventory of sites contaminated with new persistent organic pollutants was being developed and would be available by January 2011. New Zealand stated that excavation of contaminated soils and disposal in secured landfills was available and cost-effective.

B. Information gaps in respect of brominated diphenyl ethers

3. Information gaps in respect of brominated diphenyl ethers were identified as follows:
- (a) Screening and analytical methodology:
 - (i) Current analytical methodology using GC/MS is costly and time consuming for regular screening operations. Less costly and more rapid techniques exist, but most of them only achieve the separation of bromine containing materials from non-bromine containing materials. Techniques that allow faster, less costly and more accurate analysis targeting specific brominated diphenyl ethers would be desirable;
 - (ii) Some technologies that allow the separation of brominated diphenyl ethers and other brominated flame retardants from plastics and printed circuit boards are being or have been developed. Further assessment of obstacles to the full-scale application of such technologies is needed;
 - (b) Global material flow:
 - (i) There are significant gaps in information relating to substance flow, including production, use, recycling and end-of-life of articles containing bromodiphenyl ethers;
 - (ii) Some studies have shown that bromodiphenyl ethers are found in plastic products that are not treated with flame retardants, including children's toys, household goods and video tapes. The extent of this secondary contamination is unknown;
 - (c) Destruction efficiency of bromodiphenyl ether incineration:
 - (i) The operating temperature required for municipal waste incinerators to destroy bromodiphenyl ethers is known to be 850 °C, while polychlorinated biphenyls require 1,100 °C. Information on incinerators operated in line with specifications for best available techniques and best environmental practices is limited;
 - (ii) Brominated diphenyl ethers, polybrominated dibenzo-*p*-dioxins, polybrominated dibenzo furans (PBDD/PBDF), mixed polyhalogenated dibenzo-*p*-dioxins and mixed polyhalogenated dibenzo furans (PXDD/PXDF) may be released from incinerators due to unstable conditions or to corrosion in

21 www.umweltdaten.de/publikationen/fpdf-l/2971.pdf (see also IEC 62321:2008, EN 62321:2009).

- the boiler sections of incinerators caused by high waste loads. No assessments of long-term destruction efficiency of bromodiphenyl ethers have been reported;
- (iii) No information is available on quantities of brominated diphenyl ethers, PBDD/PBDF or PXDD/PXDF released from incinerators not operated in accordance with best available techniques and best environmental practices, including in developing countries and countries with economies in transition;
 - (iv) Products of combustion such as bottom ash, grate siftings and fly ash are analyzed to assess and control releases of hazardous chemicals. Bottom ash is composed of non-combustible materials or materials too large to be combusted. Grate siftings are small particles that fall through incinerator grates during the combustion process. Fly ash is made up of very small non-combustible particles. Analytical data for brominated diphenyl ethers, PBDD/PBDF, or PXDD/PXDF in fly ash are limited. Only a few countries have policies on the handling of grate siftings;
- (d) Other end-of-life treatment technologies:
- (i) Other end-of-life treatment technologies include copper smelters, electric arc furnaces, primary steel plants (blast furnaces, coke plants and sinter plants), secondary aluminium smelters, antimony plants, cement kilns, pyrolysis and gasification. Many materials containing brominated diphenyl ethers are treated in copper smelters and electric arc furnaces;
 - (ii) Evaluation of the environmental and health impacts of these technologies requires the following information:
 - a. Types and quantities of articles containing brominated diphenyl ethers being treated in plants using these technologies;
 - b. Monitoring data for releases of bromodiphenyl ethers, PBDD/PBDF and PXDD/PXDF that could be used for substance flow analysis and impact assessment on occupational health and environment;
 - c. Destruction efficiency of brominated diphenyl ethers as required by best available techniques and best environmental practices;
 - d. Information on available technology to reduce emissions of brominated diphenyl ethers sufficiently, in addition to related hazardous chemicals such as PBDD/PBDF, PXDD/PXDF and chemicals formed due to debromination of brominated diphenyl ethers;
- (e) Effect of background exposure on human health:
- (i) High outliers are often reported in studies on human exposure to brominated diphenyl ethers but potential sources of high-level contamination have not been identified. Further assessment of the risks of exposure to brominated diphenyl ethers, in particular for children, is critical;
 - (ii) The United States Environmental Protection Agency defines maximum acceptable oral dose of a given toxic substance as a “reference dose” (RfD). A recent study on neurodevelopmental toxicity of brominated diphenyl ethers indicates that there is an adverse effect at very low doses of brominated diphenyl ethers (Herbstman J.B., et al., 2010) which implies a need for further evaluation of current indicators such as RfD for brominated diphenyl ethers;

- (f) Debromination of listed bromodiphenyl ethers in technical processes and landfills:
 - (i) During the development of the technical review of brominated diphenyl ethers,²² the issue of the debromination of brominated flame retardants was raised. New information on the subject was provided to the Persistent Organic Pollutants Review Committee²³ for consideration at its sixth meeting and will be further considered at its seventh meeting;
 - (ii) Information such as rates of debromination in the environment and in landfills as well as on the impact of debromination in various technical processes would be vital;
- (g) Risk assessment scenarios for recycling and end-of-life treatment:
 - (i) Risk assessment for chemicals has been focused mainly on the production and use phases and less on the end-of-life or recycling phases;
 - (ii) Little is known about the long-term environmental effects of brominated diphenyl ethers deposited in landfills.

II. Information on perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOF)

A. Key findings relevant to PFOS, its salts and PFOF

4. Thirty-two countries responded to the request for information on PFOS, its salts and PFOF (Algeria, Austria, Brazil, Bulgaria, Canada, Côte d'Ivoire, the Czech Republic, Estonia, Germany, Honduras, Iceland, Indonesia, Japan, Lithuania, Mauritius, Monaco, Morocco, Mozambique, the Netherlands, Norway, Peru, the Republic of Korea, the Republic of Moldova, Romania, Serbia, Sierra Leone, Sweden, Switzerland, Trinidad and Tobago, Ukraine, Uruguay and the United States). Several of these countries reported that they had no relevant information. The European Semiconductor Industry Association also submitted information in response to the request.

5. In summary, information was provided on the following topics:

- (a) Types and quantities of articles containing PFOS, its salts and PFOF, including concentrations of those substances in such articles:
 - (i) Several countries indicated that there was a lack of information;
 - (ii) Stockpiles of fire-fighting foams were reported by Austria, Canada, Iceland, the Netherlands, Norway, the Republic of Korea and Switzerland, with some countries including information about the amount of such stockpiles. Some countries reported that the labels on containers of aqueous film forming foams (AFFF) did not specify whether the foams contained PFOS-related substances or other fluorinated compounds. Switzerland reported on aviation hydraulic fluids and photo imaging, and Brazil reported on insect baits for control of leaf-cutting ants and insecticides for red imported fire ants and termites;
 - (iii) No information was provided on former major uses of PFOS-related substances in carpets, paper, textiles and furniture;
- (b) Types of processes using PFOS, its salts and PFOF, including concentrations of those substances used in such processes, options for the environmental management of such processes, recycling operations and releases and potential releases resulting from such processes:
 - (i) Several countries indicated that there was a lack of information;

22 UNEP/POPS/POPRC.6/2/Rev.2.

23 UNEP/POPS/POPRC.6/INF/20/Rev.1.

- (ii) Many countries mentioned the use of PFOS-related substances in metal plating, primarily chromium plating (Austria, Canada, Germany, Japan, the Netherlands, Norway, Switzerland and the United States). Switzerland also reported their use in nickel plating. Austria has evaluated alternatives to PFOS-related substances in metal plating, while Japan has phased them out. The United States has conducted a study of chromium plating;²⁴
 - (iii) Brazil reported on the amination process to synthesize sulfuramid, an active ingredient of leaf-cutting ant bait;
 - (iv) The Republic of Korea reported the use of PFOS-related substances in semiconductor production. The European Semiconductor industry reported that the voluntary agreement by the global semiconductor industry has been applied to photolithography applications of PFOS-related substances since 2006. The industry group highlighted that PFOS-related substances continued to perform an important role in the manufacture of semiconductors while its non-critical uses has been gradually reduced or eliminated. The voluntary agreement also ensured the environmentally sound management of the incineration of solvent wastes containing PFOS-related substances;
- (c) No information was provided on the types of articles recycled, the extent of recycling, types of articles produced from recycling, options for the environmental management of recycling operations and releases or potential releases resulting from recycling operations;
- (d) No information was provided on the cost effectiveness of different management options;
- (e) Methods for sampling and analysis of PFOS, its salts and PFOSF in articles:
- (i) Several countries reported on sampling and analytical methods for PFOS-related substances, including methods based on national or international standards and scientific literature (Austria, Brazil, Canada, the Czech Republic, Germany, Norway, Serbia and the United States);
 - (ii) Examples of the international and national standards include ISO 25101:2009, ONR CEN/TS 15968 and DIN 38407-42;
- (f) Identification of remediation methods for sites contaminated with chemicals as indicated in subparagraph 1 (e) of Article 6 of the Convention: Norway mentioned remediation of soil contaminated by fire-fighting foam containing PFOS at Rygge airport as an example of excavation and disposal in secured landfills in accordance with national regulations on the safe disposal of hazardous waste.²⁵ Sweden mentioned a pilot study on assessment of activated carbon for treatment of water contaminated by PFOS-related substances. The United States reported on a study on the extent of pollution, including potential routes of exposure and potential health effects, caused by bio-solids containing PFOS-related substances;²⁶
- (g) Other relevant information:
- (i) In several countries regulations have been developed to control PFOS-related substances. In the European Union, PFOS-related substances are covered by under the regulation on the registration, evaluation, authorization and restriction of chemicals (REACH). Japan has developed a comprehensive framework governing the use and import of PFOS-related substances. Norway has developed a framework governing processes using PFOS, its salts or PFOSF and has prohibited the production, import, export and marketing of articles containing more than 0.005 per cent of PFOS-related substances. Mauritius mentioned that it was preparing to include PFOS in its Dangerous Chemicals Control Act;
 - (ii) Germany published an information document on perfluorinated and polyfluorinated chemicals;²⁷

24 www.epa.gov/oppt/pfoa/pubs/pfoschromeplaterstudypdf_final.pdf.

25 www.klif.no/publikasjoner/2444/ta2444.pdf.

26 www.epa.gov/region4/water/PFCindex.html.

27 www.umweltdaten.de/publikationen/fpdf-l/3818.pdf.

- (iii) Special care is required when selecting technologies for the destruction of PFOS-containing articles and the treatment of related waste flue gases. The carbon-fluorine bond is more stable than the carbon-chlorine bond and therefore the destruction technologies for PFOS require equivalent or greater potency than those for polychlorinated biphenyls. Some degradation products of fluorinated organic compounds are highly toxic (perfluoroisobutene, vinyl fluoride, monofluoroacetic acid, tetrafluoroethane and hydrogen fluoride); could contribute to climate change (volatile perfluorinated organic compounds); have ozone-depleting properties (volatile hydrofluoro organic compounds, volatile fluorinated-chlorinated organic compounds); or are corrosive (hydrogen fluoride);
- (iv) Many studies indicated adverse effects of PFOS-related substances on reproductive health. High levels of PFOS detected in serum samples of young Danish men were associated with fewer normal sperm (Joensen et al., 2009). Delayed pregnancy was observed at higher levels of PFOS and perfluorooctanate (PFOA) in plasma samples from Danish women (Fei et al., 2009). Correlation between prenatal exposure to PFOS and PFOA and reduced foetal growth was reported (Washino et al., 2009). A linkage between cord serum concentrations of PFOS and PFOA and reduced weight and size at birth was reported (Apelberg et al., 2007). Increased odds of Attention Deficit Hyperactivity Disorder (ADHD) were observed in children with higher serum levels of PFOS and related substances (Hoffman et al., 2010);
- (v) Fluorinated or non-fluorinated alternatives to PFOS-related substances are available for a wide range of PFOS applications. The guidance document on alternatives to PFOS and its derivatives was endorsed at the sixth meeting of the Review Committee;²⁸
- (vi) Several reports indicated that deposition of PFOS-related substances at dump sites and landfills contaminated the surrounding environments, potentially posing risks to human health and the environment. Other reports indicated that the use of PFOS-related substances resulted in contamination of environmental matrices including soil and groundwater (Weber et al., 2010a,b);
- (vii) Information on the application of PFOS-related substances in 2000 indicated that over 75 per cent had been used in consumer products such as carpets, paper, textiles, furniture, leather and surface coating. Some consumer products remain in use for several years, in particular carpets, and will eventually be deposited in landfills (Fricke et al., 2008). Some information indicates that carpets containing PFOS-related substances are being recycled or used for other purposes, e.g., in the United States²⁹ and the United Kingdom.³⁰

B. Information gaps in respect of PFOS, its salts and PFOSF

6. Information gaps in respect of PFOS, its salts and PFOSF were identified as follows:

(a) Articles containing PFOS-related substances exist in the waste and recycling stream. Information on the types of articles recycled, the extent of recycling, the types of articles produced from recycling, options for the environmental management of recycling operations and releases or potential releases resulting from recycling operations is, however, not available. A globally coordinated survey to gather such information is critical to enable the assessment of the possible health and environmental impacts of recycling articles containing PFOS-related substances;

(b) Articles containing PFOS-related substances are treated in waste incinerators, cement kilns and other thermal treatment plants. Information on the destruction efficiency for PFOS-related substances is limited. Tests, including preliminary tests, have been conducted in municipal waste incineration and sewage sludge incineration. Further assessment of the destruction efficiency for PFOS-related substances for different levels of technology and requirements for best available techniques and best environmental practices would be relevant;

28 UNEP/POPS/POPRC.6/13/Add.3.

29 www.carpetrecovery.org/.

30 www.carpetrecyclinguk.com/.

(c) Articles containing PFOS-related substances enter end-of-life treatment schemes, including landfills. Information on the fate of PFOS-related substances introduced to landfills, including on the extent of their release from landfills, is lacking however;

(d) No country suggested appropriate or sustainable remediation methods for sites contaminated with PFOS-related substances;

(e) Analytical methodologies for PFOS-related substances, including precursors, applicable to different matrices are limited. In particular analytical methods for chemically bound PFOS precursors contained in articles such as carpets, paper and textiles are not available;

(f) Information on levels and timing of releases of PFOS from articles such as carpets, paper and textiles was not found;

(g) The extent of occupational exposure to PFOS-related substances has not been reported in the public domain. Information on the effect of exposure to multiple chemicals, including information on the genotoxicity of PFOS-related substances, is limited. Assessment of the toxicity of potential alternatives to PFOS-related substances is limited.

III. Information on other chemicals added to Annex A or B of the Convention at the fourth meeting of the Conference of the Parties

A. Lindane, alpha hexachlorocyclohexane and beta hexachlorocyclohexane

1. Key findings relevant to hexachlorocyclohexanes

7. Hexachlorocyclohexanes (HCHs) have three main isomers: alpha hexachlorocyclohexane, beta hexachlorocyclohexane and lindane, (also known as gamma hexachlorocyclohexane). During the production of lindane, alpha and beta hexachlorocyclohexane are also produced as by-products.

8. Seventeen countries responded to the request for information on HCHs (Algeria, Bulgaria, Côte d'Ivoire, Croatia, the Czech Republic, Honduras, Indonesia, Lithuania, the Netherlands, the Republic of Korea, the Republic of Moldova, Romania, Serbia, Switzerland, Trinidad and Tobago, Ukraine and the United States).

9. In summary, the following information was provided:

(a) HCHs contained in articles:

- (i) Eleven countries provided information on the extent of lindane in articles (Algeria, Bulgaria, Côte d'Ivoire, Croatia, Honduras, Indonesia, the Republic of Korea, Serbia, Switzerland, Trinidad and Tobago and the United States);
- (ii) Switzerland reported that two veterinary medical products for use against fleas and lice contained lindane. The use was to be phased-out according to a draft amendment to the ordinance on risk reduction, which would enter into force by the end of 2010. Trinidad and Tobago reported that lindane was only used in head lice treatments and pet care. The United States reported that lindane was currently approved by the Food and Drug Administration for human pharmaceutical use in the treatment of lice and scabies. Serbia reported that lindane had been withdrawn from the market in December 2007 and had not been in use since then;

(b) Stockpiles of HCHs: several countries reported detailed information regarding lindane stockpiles (Bulgaria, the Czech Republic, the Republic of Korea, the Republic of Moldova, Romania, Serbia, Ukraine and the United States). Bulgaria reported on the destruction of HCH stockpiles and the Republic of Moldova on the repacking of HCH wastes. Some other countries have addressed stockpiles of HCHs in their national implementation plans or are planning to do so;

(c) Sites contaminated with HCHs:

- (i) Some countries provided information on HCHs at contaminated sites and in waste deposits (Algeria, Bulgaria, the Czech Republic, Honduras, Lithuania, the Netherlands, the Republic of Moldova and Romania);
- (ii) The Czech Republic reported that approximately 10,000 tons of HCHs had been deposited at a former production site, that 5,000 tons had been deposited at another site and that groundwater and soil at both sites were highly polluted. It further stated that the conditions at both sites posed potential human-health

and ecological risks and that remediation of the contaminated sites was currently being considered by the Ministry of the Environment and the Ministry of Finance;

- (iii) Lithuania reported intensive contamination of the environment by pesticides, including persistent organic pollutant pesticides. Persistent organic pollutants had been detected in the soil at 58 sites and in the groundwater at 32 sites. Lithuania included HCHs in its survey, which showed that despite the clean-up of former pesticide storage sites and the removal of pesticides, previous activities had left a large volume of contaminated soil and groundwater and that the sites still posed potential risks to human health and environment. Lithuania's national programme on the management of former pesticide storage sites and sites contaminated with pesticides concluded that investigation and remediation of such sites should be intensified;
- (iv) The Republic of Moldova highlighted that investigations of sites contaminated with HCHs showed risks to the environment and local populations because access to the sites by people and animals was unrestricted. Some sites were close to residential areas and water basins;
- (v) Honduras highlighted that there were currently no projects on sites contaminated with HCHs due to a lack of laboratory capacity. The country had no legislation on contaminated sites but had assessed persistent organic pollutant stockpile storage.

10. The risk management evaluations for lindane,³¹ alpha hexachlorocyclohexane³² and beta hexachlorocyclohexane,³³ in addition to other sources, reported that between 4 million and 7 million tons of wastes containing HCHs, primarily alpha hexachlorocyclohexane (80 per cent) and beta hexachlorocyclohexane, were estimated to have been deposited globally during the 60 years of lindane production in Argentina, Austria, Brazil, China, the Czech Republic, France, Germany, Hungary, India, Italy, Japan, the former Yugoslav Republic of Macedonia, Nigeria, Poland, Romania, Slovakia, South Africa, Spain, Switzerland, Turkey, the Netherlands, the United Kingdom and the United States. This represents the largest total stockpile of a single persistent organic pollutant. The fate of approximately 1.9 million tons of HCH wastes has been documented (Vijgen et al., 2006).

11. Groundwater contamination at a former lindane production site in Germany was reported. Over 60,000 tons of HCHs have been deposited at that site (Weber et al., 2008). Heavy contamination of groundwater, surface water and soil and associated risks to human health and the environment in the area surrounding a former lindane production site in India were reported: approximately 36,000–54,000 tons of HCHs were said to have been deposited there (Abhilash et al., 2009; Jit et al., 2010).

12. Detailed inventories of HCHs have been prepared in some countries. Extensive clean-up work has been undertaken in the Netherlands, including clean-up of 200,000 tons of HCH-contaminated soils over a period of more than a decade.

2. Information gaps in respect of HCHs

13. Information on approximately 2–5 million tons of HCH wastes is missing. While a large part of those wastes has probably been deposited, some might have been recycled. The proportion of any deposited or recycled waste is unknown.

14. Little is known about the impact of HCH waste deposits on the environment and human health.

15. More information should be shared on the efficacy and availability of alternatives to lindane, including for control of head lice and scabies.

31 UNEP/POPS/POPRC.3/20/Add.4.

32 UNEP/POPS/POPRC.4/15/Add.3.

33 UNEP/POPS/POPRC.4/15/Add.4.

B. Chlordecone

1. Key findings relevant to chlordecone

16. Three countries responded to the request for information on chlordecone (Côte d'Ivoire, Lithuania and the United States). Lithuania and Côte d'Ivoire reported that no information was available.

17. According to the risk management evaluation on chlordecone,³⁴ approximately 160,000 tons of chlordecone were produced in the United States between 1958 and 1976. Chlordecone was also produced in France from 1981 to 1993 and also in Brazil. The United States reported the existence of sites contaminated with chlordecone.

18. The unrestricted application of chlordecone in banana plantations has contaminated large areas of the French West Indies, Martinique and Guadeloupe. Since 2003 the local authorities in Guadeloupe have restricted the cultivation of crops due to the contamination of soil by chlordecone. A study reported a significant increase in the risk of prostate cancer with increasing plasma chlordecone concentration (Multigner et al., 2010), and Guadeloupe has one of the highest prostate cancer rates in the world (Mallick et al., 2005).

2. Information gaps in respect of chlordecone

19. The risk management evaluation for chlordecone indicates that the substance might still be produced or used as an agricultural pesticide in some developing countries, although there have been no reports of such production or use.

20. Information on sites contaminated with chlordecone is limited.

C. Hexabromobiphenyl

1. Key findings relevant to hexabromobiphenyl

21. No information on hexabromobiphenyl was provided by parties or observers.

22. The risk management evaluation on hexabromobiphenyl³⁵ indicates that it was produced in the United States from 1970 to 1976, and was used mainly in polyurethane foam in cars, bus seats and roof-linings. Polyurethane foam is currently recycled in some countries.

2. Information gaps in respect of hexabromobiphenyl

23. The number of articles containing hexabromobiphenyl in polyurethane foam, including car seats, currently in use or being recycled is unknown.

D. Pentachlorobenzene

1. Key findings relevant to pentachlorobenzene

24. Three countries responded to the request for information on pentachlorobenzene (the Czech Republic, Honduras and Lithuania). The Czech Republic reported that sites contaminated with pentachlorobenzene had been taken into account in its inventory process. Honduras reported that pentachlorobenzene had not been produced or used and that there was no inventory of the chemical or related products. Lithuania reported that there was no data on the presence of pentachlorobenzene in articles, stockpiles or contaminated sites in the country.

25. Additional information on unintentional releases of pentachlorobenzene was provided at the sixth meeting of the Persistent Organic Pollutants Review Committee.³⁶ A study suggested that the degradation of pentachloronitrobenzene, also known as quintozone, in soil resulted in the formation of pentachlorobenzene at a yield of approximately 3 per cent (Beck et al., 1974). Another study reported releases of pentachlorobenzene from residuals of production of solvents such as tetrachloromethane, tetrachloroethene, trichloroethene, and ethylene dichloride.

2. Information gaps in respect of pentachlorobenzene

26. Information on potential sources of unintentional releases of pentachlorobenzene, such as degradation of pentachloronitrobenzene in soil and production of specific chlorinated solvents, is limited. Furthermore, little is known about the global use and production of pentachloronitrobenzene,

34 UNEP/POPS/POPRC.3/20/Add.2.

35 UNEP/POPS/POPRC.3/20/Add.3.

36 UNEP/POPS/POPRC.6/INF/21.

quantities of wastes that may contain pentachlorobenzene generated from solvent production, disposal practices in respect of such wastes, levels of contamination in environments surrounding manufacturing sites, and the effect of such wastes on the environment and human health.

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Annex III

Proposal on next steps for short-chained chlorinated paraffins

1. The concluding statement of the draft risk profile for short-chained chlorinated paraffins³⁷ gives two options for the final conclusion:
 - 1) Based on the available evidence, it is concluded that short-chained chlorinated paraffins are likely, as a result of their long-range environmental transport, to lead to significant adverse environmental and human health effects, such that global action is warranted; or
 - 2) Based on available information, there is inadequate evidence to support the conclusion that short-chained chlorinated paraffins are likely, as a result of their long-range environmental transport, to lead to significant adverse environmental and human health effects, such that global action is warranted.
2. Having discussed the draft risk profile and proposed conclusions at the current meeting, the Committee was unable to take a decision because of uncertainties in applying criteria specified in Annex E.
3. To facilitate discussions and decision-making on short-chained chlorinated paraffins, the Committee agreed to establish an intersessional working group:
 - (a) To discuss the application of the criteria specified in Annex E to the Stockholm Convention on Persistent Organic Pollutants to short-chained chlorinated paraffins;
 - (b) To consider information from the proposed study by the intersessional working group on toxicological interactions on chlorinated paraffins, if the information is available;
 - (c) To revise the relevant parts of the draft risk profile intersessionally on the basis of the results of the activities mentioned in subparagraphs (a) and (b) above;
4. The revised draft risk profile will be presented to the Committee at its eighth meeting for its consideration.

37 UNEP/POPS/POPRC.6/11/Rev.1.

Annex IV

Work programme on toxicological interactions

I. Information that may assist the Committee in considering toxicological interactions

<i>Questions identified during past meetings</i>	<i>Answers suggested by the co-chairs</i>
What additional information is needed to assist the Committee in its deliberations on the issue of toxic interactions?	<ul style="list-style-type: none"> • Understanding of toxicological and ecotoxicological effects of less-explored new compounds; • Understanding of effects of complex chemical mixtures; • Studies of vulnerable and keystone species³⁸ such as arctic gulls, polar bears or ringed seals; • Characterization of links between exposures and/or biomarkers (e.g., immune parameters, hormone levels) with the effects in populations; • Understanding of persistent organic pollutant effects in the context of additional stressors and parameters (other anthropogenic activities, parasite and micropathogen infections, food scarcity, sensitive developmental stages, climate change, etc.); • Mode of action of individual chemicals.
What specific information on persistent organic pollutant interactions should be included in a risk profile?	<ul style="list-style-type: none"> • Information concerning additive or antagonistic and synergistic effects; • Toxicological effects of environmental mixtures connected with actual environmental levels; • Ecotoxicological effects of environmental mixtures of chemicals.
What would be the possible implications of interactive effects of persistent organic pollutants for the application of the precautionary approach described in Annex E?	<ul style="list-style-type: none"> • If no or only limited information is available from field or laboratory studies, the additivity approach should be considered as the most appropriate from a precautionary point of view.
What guidance on the preparation of a risk profile should the Committee provide regarding consideration of interactive effects?	<ul style="list-style-type: none"> • Risk assessment guidance on combined exposure to multiple chemicals, including how to apply the relevant endpoints of multiple exposure and effects.

II. Proposal for further work on toxicological interactions

1. The intersessional working group on toxicological interactions will coordinate and support the implementation of further work on toxicological interactions.
2. Two studies on exposure to multiple chemicals will be undertaken based on the framework developed with the objective of devising a generic approach to toxicological interactions in the Committee's evaluation of chemicals proposed for listing under the Convention, in particular during the assessment of Annex E information and the development of risk profiles.
3. The first study will focus on chlorinated paraffins. The second will focus on an overview of methodological approaches to the evaluation of toxic effects of exposure to complex environmental mixtures of persistent organic pollutants. The key is to select an endpoint or endpoints generally acceptable for the potential multiple exposure and description of synergistic and additive effects. Below is a description of these two studies:

³⁸ A keystone species is a species that plays a critical role in maintaining the structure of an ecological community and whose impact on the community is greater than would be expected based on its relative abundance or total biomass.

Study 1

Theme: Study on toxicological interactions of chlorinated paraffins

Background: Application of selected methodological approaches for a study to evaluate the effects of complex mixtures of chlorinated paraffins.

Procedure: Review available information, paying special attention to European Union, World Health Organization and national research projects, together with those of intergovernmental and non-governmental organizations, and the workshops of the Society of Environmental Toxicology and Chemistry and the Organization for Economic Cooperation and Development, to be held in February 2011.

Study 2

Theme: Overview of methodological approaches for the evaluation of toxic effects of exposure to complex environmental mixtures of persistent organic pollutants.

Background: Exposure to environmental pollutants leads to very complex mixtures of chemicals entering organisms. The study will review methodological approaches to the evaluation of toxic and ecotoxic effects of complex chemical mixtures.

Procedure: Review available information, paying special attention to European Union, World Health Organization, United States Environmental Protection Agency and national research projects, together with those of intergovernmental and non-governmental organizations, and the Society of Environmental Toxicology and Chemistry and Organization for Economic Cooperation and Development workshops in February 2011.

4. The studies will be presented at a workshop on progress and trends in environmental chemistry, ecotoxicology and risk assessment in respect of persistent organic pollutants, which will be organized by the Research Centre for Toxic Compounds in the Environment, the Stockholm Convention, the Division of Environmental Chemistry of the European Association for Chemical and Molecular Sciences and the American Chemical Society, from 22 to 24 May 2011 in Brno, Czech Republic.
5. Based on the feedback collected from the Committee members, observers and Brno workshop experts during the intersessional period, the draft studies will be revised and presented to the Committee at its seventh meeting.

Annex V

Workplan for the preparation of a draft risk management evaluation during the period between the sixth and seventh meetings of the Persistent Organic Pollutant Review Committee

Scheduled date	Interval from previous activity (weeks)	Activity (for each chemical under review)
15 October 2010	-	Persistent Organic Pollutant Review Committee establishes an ad hoc working group.
23 October 2010	1	Secretariat requests parties and observers to provide information specified in Annex F .
8 January 2011	11	Parties and observers submit Annex F information to the Secretariat. <ul style="list-style-type: none"> • Secretariat sends a reminder to parties and observers regarding the request for information: 12 December.
2 March 2011	7	Working group chair and drafter complete the first draft . <ul style="list-style-type: none"> • Drafter prepares the first draft and sends it to the chair: 27 Feb. • Chair sends the first draft to the working group: 2 March.
16 March 2011	2	Working group members provide comments on the first draft to the chair and the drafter.
6 April 2011	3	Working group chair and drafter finish their review of initial comments from the working group and complete the second draft and a compilation of responses to the comments . <ul style="list-style-type: none"> • Drafter prepares the second draft and sends it to the chair: 4 April. • Chair sends the second draft to the working group: 6 April.
9 April 2011	<1	Secretariat distributes the second draft to parties and observers for comments.
25 May 2011	7	Parties and observers submit their comments to the Secretariat.
8 June 2011	2	Working group chair and drafter review the party and observer comments and complete the revised (third) draft and a compilation of responses to the comments . <ul style="list-style-type: none"> • Drafter prepares the third draft and sends it to the chair: 5 June. • Chair sends the third draft to the working group: 8 June.
22 June 2011	2	Working group members provide final comments on the third draft to the chair and the drafter.
6 July 2011	2	Working group chair and drafter review the final comments and complete the final draft and a compilation of responses to the comments . <ul style="list-style-type: none"> • Drafter prepares the final draft and sends it to the chair: 3 July. • Chair sends the final draft to the Secretariat: 6 July.
9 July 2011	<1	Secretariat sends the final draft to the Division of Conference Services for editing and translation.
27 August 2011	7	Division of Conference Services completes editing and translation .
30 August 2011	<1	Secretariat distributes the final draft risk management evaluation in the six official languages of the United Nations.
10–14 October 2011	6	Seventh meeting of the Committee.

Annex VI

Composition of intersessional working groups (2010–2011)

Working group on hexabromocyclododecane

Committee members

Ms. Norma Ethel Sbarbati-Nudelman (Argentina)	Mr. Mohammed Oqlah Hussein Khashashneh (Jordan)
Mr. Choviran Ken (Cambodia)	Mr. Mohammad Aslam Yadallee (Mauritius)
Mr. Robert Chénier (Canada)	Mr. Peter Dawson (New Zealand) (Chair)
Mr. Abderaman Mahamat Abderaman (Chad)	Ms. Stella Uchenna Mojekwu (Nigeria)
Mr. Ricardo Orlando Barra Ríos (Chile)	Ms. Maria Manuela Pereira (Portugal)
Mr. Jianxin Hu (China)	Mr. Kyunghye Choi (Republic of Korea)
Mr. José Álvaro Rodríguez (Colombia)	Mr. Fouad Elok (Syrian Arab Republic)
Ms. Floria Roa Gutiérrez (Costa Rica)	Ms. Svitlana Sukhorebra (Ukraine)
Mr. Ivan Holoubek (Czech Republic)	Ms. Francisca Katagira (United Republic of Tanzania)
Mr. Timo Seppälä (Finland) (drafter)	Mr. Samuel F. Banda (Zambia)
Mr. Sylvain Bintein (France)	
Mr. Reiner Arndt (Germany)	
Mr. Pablo Ricardo Rodríguez Rubio (Honduras)	
Mr. Masaru Kitano (Japan)	

Observers

Mr. Gary Fan (Australia)	Mr. Chris Blunck (United States of America)
Mr. Greg Plummer (Australia)	Ms. Sandra Keller (Croplife International)
Ms. Stephanie Bourgeau (Canada)	Mr. Mark Trehwitt (Croplife International)
Ms. Wenya Han (China)	Ms. Smadar Admon (Industry HBCD Working Group)
Mr. David Szekely (Israel)	Ms. Eva Krümmel (Inuit Circumpolar Council)
Ms. Chie Hamaguchi (Japan)	Ms. Sounkoura Adetonah (IPEN)
Ms. Yuko Imazeki (Japan)	Mr. Joe DiGangi (IPEN)
Mr. Motoshi Masuda (Japan)	Ms. Mariann Lloyd-Smith (IPEN)
Mr. Noriyasu Nagai (Japan)	Ms. Pamela Miller (IPEN)
Mr. Tokuda Wada (Japan)	Mr. Andrew Sweetman (Lancaster University)
Mr. Martien Janssen (Netherlands)	Ms. Elisabeth Ruffinengo (Women in Europe for a Common Future)
Ms. Liselott Säll (Norway)	
Ms. Christina Charlotte Tølfesen (Norway)	
Mr. Lars Andersson (Sweden)	
Ms. Maria Delvin (Sweden)	

Working group on short-chained chlorinated paraffins

Committee members

Ms. Norma Ethel Sbarbati-Nudelman (Argentina)	Mr. Ivan Holoubek (Czech Republic)
Mr. Choviran Ken (Cambodia)	Mr. Sylvain Bintein (France)
Mr. Robert Chénier (Canada) (drafter)	Mr. Reiner Arndt (Germany)
Mr. Abderaman Mahamat Abderaman (Chad)	Mr. Masaru Kitano (Japan)
Mr. Ricardo Orlando Barra Ríos (Chile)	Mr. Mohammad Aslam Yadallee (Mauritius) (chair)
Mr. Jianxin Hu (China)	Ms. Maria Manuela Pereira (Portugal)
Mr. José Álvaro Rodríguez (Colombia)	Ms. Kyunghye Choi (Republic of Korea)
Ms. Floria Roa Gutiérrez (Costa Rica)	Mr. Sanda Komla (Togo)

Observers

Mr. Gary Fan (Australia)	Mr. Motoshi Masuda (Japan)
Mr. David Szekely (Israel)	Mr. Noriyasu Nagai (Japan)
Ms. Chie Hamaguchi (Japan)	Mr. Tokuda Wada (Japan)
Ms. Yuko Imazeki (Japan)	Mr. Martien Janssen (Netherlands)

Ms. Maria Delvin (Sweden)
 Mr. Chris Blunck
 (United States of America)
 Ms. Sandra Keller (Croplife International)
 Mr. Mark Trehwitt (Croplife International)
 Ms. Eva Kruemmel
 (Inuit Circumpolar Council - Canada)
 Ms. Sounkoura Adetonah (IPEN)
 Mr. Joe DiGangi (IPEN)

Ms. Mariann Lloyd-Smith (IPEN)
 Ms. Pamela Miller (IPEN)
 Mr. Andrew Sweetman (Lancaster University)
 Ms. Elisabeth Ruffinengo
 (Women in Europe for a Common Future)
 Mr. Dolf Van Wijk
 (World Chlorine Council)

Working group on toxic interactions

Committee members

Mr. Choviran Ken (Cambodia)
 Mr. Robert Chénier (Canada)
 Mr. Abderaman Mahamat Abderaman (Chad)
 Mr. Ricardo Orlando Barra Ríos (Chile)
 Mr. José Álvaro Rodríguez (Colombia)
 Ms. Floria Roa Gutiérrez (Costa Rica)
 Mr. Ivan Holoubek (Czech Republic)
 (co-chair)
 Mr. Timo Seppälä (Finland)
 Mr. Sylvain Bintein (France)
 Mr. Reiner Arndt (Germany)
 Mr. John Alexis Pwamang (Ghana)
 Mr. Pablo Ricardo Rodríguez Rubio
 (Honduras)

Mr. Masaru Kitano (Japan)
 Mr. Mohammed Oqlah Hussein Khashashneh
 (Jordan)
 Mr. Mohammad Aslam Yadallee (Mauritius)
 Mr. Peter Dawson (New Zealand)
 Ms. Maria Manuela Pereira (Portugal)
 Ms. Kyunghee Choi (Republic of Korea)
 Ms. Bettina Hitzfeld (Switzerland)
 Mr. Fouad Elok (Syrian Arab Republic)
 Mr. Jarupong Boon-Long (Thailand)
 Ms. Francisca Katagira
 (United Republic of Tanzania) (co-chair)

Observers

Mr. Gary Fan (Australia)
 Mr. David Szekely (Israel)
 Ms. Chie Hamaguchi (Japan)
 Ms. Yuko Imazeki (Japan)
 Mr. Motoshi Masuda (Japan)
 Mr. Noriyasu Nagai (Japan)
 Mr. Tokuda Wada (Japan)
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 Ms. Liselott Säll (Norway)
 Ms. Christina Charlotte Tølfesen
 (Norway)
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Ms. Kristen J. Hendricks
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 Ms. Ninja Reineke
 (WWF European Policy office)