



**Stockholm Convention  
on Persistent Organic  
Pollutants**

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**Conference of the Parties to the Stockholm  
Convention on Persistent Organic Pollutants  
Eighth meeting**

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Item 5 (i) of the provisional agenda\*

**Matters related to the implementation of the Convention:  
effectiveness evaluation**

**Effectiveness evaluation of the Stockholm Convention  
on Persistent Organic Pollutants pursuant to Article 16**

**Addendum**

**Executive summary of the report on the effectiveness evaluation of the  
Stockholm Convention on Persistent Organic Pollutants**

**Note by the Secretariat**

1. As referred to in document UNEP/POPS/COP.8/22, the executive summary of the report on the effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants prepared by the effectiveness evaluation committee is set out in the annex to the present note. The present note, including its annex, has not been formally edited.
2. The full report on the effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants is set out in document UNEP/POPS/COP.8/INF/40.

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\* UNEP/POPS/COP.8/1.

## Annex

# Report on the effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants<sup>1</sup>

## Executive Summary

### I. Introduction

1. The objective of the Stockholm Convention adopted on 22 May 2001 is to protect human health and the environment from persistent organic pollutants (POPs). The Convention requires Parties to adopt and implement measures aimed at reducing and/or eliminating the release of POPs into the environment. Where the obligations allow for flexibility, the measures adopted by Parties may vary to some degree, reflecting their differing situations. It is expected, however, that in combination they will reduce and/or eliminate overall releases with consequent benefits for human health and the environment across the globe.

2. Paragraph 1 of Article 16 of the Convention states that, commencing four years after the date of entry into force of the Convention, and periodically thereafter at intervals to be decided by the Conference of the Parties, the Conference shall evaluate the effectiveness of the Convention. Paragraph 3 of Article 16 states that the evaluation shall be conducted on the basis of available scientific, environmental, technical and economic information.

3. As the Convention's impact will be the result of individual and collaborative measures by Parties, any evaluation of that impact must as a practical matter include an assessment of whether the combination of measures adopted by Parties provides, at the aggregate level, a timely improvement in the situation prevailing before the Convention entered into force.

4. The first effectiveness evaluation was completed in May 2009 at the fourth meeting of the Conference of the Parties.<sup>2</sup> However, it was noted that the procedures for the evaluation stage of the effectiveness evaluation were not defined at that time. An ad hoc working group was established to develop possible procedures for this purpose for consideration at the fifth meeting of the Conference.<sup>3</sup>

5. At its sixth meeting in May 2013, the Conference of the Parties adopted the framework for effectiveness evaluation along with the terms of reference of an effectiveness evaluation committee with the mandate to undertake the evaluation, draw conclusions and make recommendations on its basis.<sup>4</sup>

6. The effectiveness evaluation committee was established by the Conference of the Parties at its seventh meeting to serve until the close of its eighth meeting. The first six-year evaluation cycle takes place between 2010 and 2017.

### A. Purpose of this report

7. The purpose of the effectiveness evaluation report is: to assess, in accordance with the framework for effectiveness evaluation, whether the Convention has succeeded in achieving its objective of protecting human health and the environment from POPs; to determine more specifically the effectiveness of the specific measures provided in the Convention to achieve this objective; and to identify ways to improve the effectiveness of the Convention.

8. The Conference of the Parties also tasked the Committee with evaluating the framework itself and making recommendations for changes to the framework. These are provided as a separate report on the effectiveness evaluation framework in document UNEP/POPS/COP.8/INF/41.

### B. Information collection, compilation, synthesis and evaluation

9. Key data sources used in this evaluation included those specified in Article 16: reports and other monitoring information, and especially the monitoring reports of the global monitoring plan;

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<sup>1</sup> The executive summary is reproduced as set out in the report on the effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants contained in UNEP/POPS/COP.8/INF/40, which has not been formally edited.

<sup>2</sup> SC-4/32.

<sup>3</sup> UNEP/POPS/COP.5/31.

<sup>4</sup> UNEP/POPS/COP.6/27/Add.1/Rev.1.

national reports (first, second and third reports) and other information on measures taken to implement the provisions of the Convention pursuant to Article 15; and national implementation plans (NIPs) submitted pursuant to Article 7. Since the Conference of the Parties has not yet been able to agree to procedures and mechanisms for the implementation of Article 17 on non-compliance, there was no information on compliance provided pursuant to such procedures.

10. The Secretariat collected and compiled the available scientific, environmental, technical and economic information, and any relevant additional sources, and prepared a preliminary analysis, on the basis of which the present effectiveness evaluation report has been developed by the effectiveness evaluation committee. The full list of references is provided in document UNEP/POPS/COP.8/INF/40.

### **C. Information analysis**

11. According to the framework for effectiveness evaluation, the evaluation is to conform to the standards for evaluation in the United Nations system (United Nations Evaluation Group 2005). This report evaluates the overall progress and effectiveness of the Convention from when the Convention or its amendments entered into force for most Parties. When such information was not available (e.g., monitoring data) the first relevant information that was available was considered as the baseline against which changes over time were evaluated.

### **D. Assumptions**

12. Temporal and spatial changes in levels of POPs in the environment are good indicators of whether the objective of the Convention is being achieved since a decrease in those levels over time would decrease exposure to POPs and thus their adverse impacts on human health and the environment. Attributing changes observed to measures undertaken is challenging since most measures are not carried out in isolation.

13. To evaluate the extent to which observed changes could be attributed to the measures undertaken under the Convention, a number of assumptions and concurrent processes were taken into account:

(a) The implementation of national actions to reduce or eliminate the production, use and release of POPs would not have occurred, or would have been less effective or occurred at a later time, if the Convention had not been in place; although measures addressing environmental contamination and human exposure to POPs had already been in place in some regions prior to the Convention, the entry into force of the treaty has expanded such measures to the global level, enabling concerted global action, and a wider scope of action by listing new chemicals;

(b) If implemented, obligations under the Convention would help to protect human health and the environment from the adverse effects of POPs.

### **E. Challenges**

14. The implementation of the Convention depends primarily on actions and activities by Parties, which constitute a large and diverse group of countries. Collecting comparable data from such a group is complex. Parties report on whether measures have been adopted but in most cases data on the extent of implementation or the success of these measures (outcomes) are not readily available, and when available, data are not easily compared between countries or regions. The lack of data on outcomes limits the ability to interpret the information available.

15. National reports were a main source of data for the evaluation. The lack of national reports, their lateness and the inaccuracies they contained seriously hampered the ability of the Committee to undertake this evaluation.

16. The absence of an established compliance mechanism has resulted in large gaps in information on whether Parties are meeting their obligations under the Convention. Such information is crucial in determining whether the Convention is effective in meeting its objective, as it would provide information for determining non-compliance with its provisions. If all Parties move towards full compliance, and there remain significant levels of listed POPs in the environment, then this could suggest that current Convention controls do not sufficiently address the problem of POPs.

## **II. Evaluation of the effectiveness of the Convention**

17. The evaluation is grounded on the Convention's objective to protect human health and the environment from POPs and considers process and outcome indicators. Process indicators measure actions undertaken during implementation. Outcome indicators measure the desired impact of the measures adopted to implement the Convention.

18. The evaluation is structured according to the framework provided by the Conference of the Parties,<sup>5</sup> but grouped by main areas of implementation of the provisions of the Convention. Following the assessment under each Article, there is a synthesis of the outcomes of the effectiveness evaluation and overall conclusions and recommendations of the evaluation.

#### **Overall outcomes of the effectiveness evaluation**

19. The effectiveness evaluation report<sup>6</sup> assesses, in accordance with the framework for effectiveness evaluation,<sup>7</sup> whether the Convention has succeeded in achieving its objective of protecting human health and the environment from POPs, and identifies ways to improve the effectiveness of the Convention.

20. The Convention provides an effective and dynamic framework to regulate POPs throughout their lifecycle, addressing the production, use, import, export, releases, and disposal of these chemicals worldwide. However, inadequate implementation is the key issue that has been identified in this evaluation.

21. Mechanisms and processes required by the Convention to support Parties in meeting their obligations have all been put in place, with the exception of procedures and mechanisms on compliance. A key challenge in undertaking this evaluation was the limited data available from national reports and NIPs, and recommendations have been made to address these and other implementation issues.

22. Monitoring results indicate that regulations targeting POPs are succeeding in reducing levels of POPs in humans and the environment. For POPs listed in 2004, concentrations measured in air and in human populations have declined and continue to decline or remain at low levels due to restrictions on POPs that predated the Stockholm Convention and are now incorporated in it. For the newly listed POPs, concentrations are beginning to show decreases, although in a few instances, increasing and/or stable levels are observed.

23. While the effectiveness of the Convention is evaluated through the Convention's provisions, other international collaboration promoting the sound management of chemicals and waste, contributes to the achievement of the objectives of the Convention.

24. The framework for effectiveness evaluation adopted by the Conference of the Parties provided a good basis for conducting the first evaluation cycle, and based on the experience in using the framework, suggestions have been made to improve it for the next evaluation cycles in document UNEP/POPS/COP.8/INF/41.

## **A. Objective**

### **1. Protecting human health and the environment (Article 1)**

25. The outcome to be addressed in assessing the effectiveness of efforts to achieve the Convention objective set out in Article 1 is whether the levels of POPs in humans and the environment have diminished over time. This represents a global outcome indicator of improved human health and environmental protection.

26. The evaluation made use of the second global monitoring report which was developed on the basis of the five regional monitoring reports<sup>8</sup> by the coordination group for the global monitoring plan. The report synthesizes information from the first (2000-2008) and second (2009-2015) phase of the GMP and presents the current findings on POPs concentrations at the global scale.<sup>9</sup>

#### **(a) Main findings**

27. For most "legacy POPs" (those 12 substances listed when the Convention entered into force in 2004), concentrations in air have declined and continue to decline or remain at low levels due to restrictions on POPs that predated the Stockholm Convention and have been maintained since. For many "newly listed POPs" (those POPs listed after 2004) concentrations in air in some regions are beginning to show declining tendencies, although in a few instances, increasing and/or stable levels are observed.

<sup>5</sup> UNEP/POPS/COP.6/27/Add.1/Rev.1.

<sup>6</sup> UNEP/POPS/COP.8/INF/40.

<sup>7</sup> UNEP/POPS/COP.6/27/Add.1/Rev.1.

<sup>8</sup> UNEP/POPS/COP.7/INF/38.

<sup>9</sup> UNEP/POPS/COP.8/INF/38.

28. In regions with sufficient data to evaluate changes over time, levels of legacy POPs such as polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF), polychlorinated biphenyls (PCB), and DDT/DDE,<sup>10</sup> including their transformation products, have generally declined in human tissues. For the newly listed POPs, information regarding changes over time is very limited. Based on studies available from the Western Europe and Others Group and from Asia Pacific, the levels of brominated diphenyl ethers (BDEs) and perfluorooctane sulfonic acid (PFOS) seem to be gradually declining.

29. Temporal trend information for PFOS in water is very limited. Differences in sampling locations and in detection limits preclude any robust assessment of trends for now.

30. For other media, there are clear declines of legacy POPs from the 1970s until 2000 and few changes thereafter. Newly listed POPs (such as BDEs, hexabromocyclododecane (HBCD), PFOS and endosulfan) show increasing trends over the period from 2004 to 2014; the increases in some cases (e.g., PFOS) seem to have slowed down or stabilized and some decreasing trends are also detected.

**(b) Conclusions and recommendations**

31. Monitoring data suggest that the continued existence of targeted regulations, including those that predated the Convention in some regions, is working towards reducing levels of POPs in the environment and in human populations. Effective regulatory actions at the global level post-entry into force of the Convention, particularly for listed POPs that are still in commerce, are expected to lower environmental concentrations in the long term.

***Recommendation:** Global monitoring of POPs, as well as data sharing and modelling should be sustained in the long term to confirm decreasing concentrations of legacy POPs in the environment and in humans and to identify trends in the concentrations of the newly listed POPs.*

**B. Control Measures**

**1. Measures to reduce or eliminate releases from intentional production and use (Article 3)**

32. Article 3 provides measures to reduce or eliminate releases from intentional production and use of chemicals listed in Annex A and Annex B to the Convention. The outcomes to be addressed in assessing the effectiveness of Article 3 in helping to achieve the Convention objective are whether: the production, use, import and export of the chemicals listed have been eliminated (Annex A chemicals) or restricted (Annex B chemicals); and, whether the production and use of new pesticides or new industrial chemicals that have characteristics of POPs have been prevented.

33. Information was collected from either the third, second, first national reports or the NIPs. Of the 180 Parties to the Stockholm Convention, 164 Parties had submitted at least one of the four sources of information. The information on the use of POPs was mainly obtained from the NIPs as it was not asked for in the national reports. As the NIPs outline a plan for implementing treaty obligations, rather than reporting on how they were actually implemented, the information they provide has its limitations. In addition, the evaluation process considered the compilation of information obtained by survey and presented at the fifth meeting of the Conference of the Parties.<sup>11</sup>

34. The amendment to list HBCD entered into force for most of the Parties on 26 November 2014. The amendments to list HCBD, pentachlorophenol and its salts and esters, and polychlorinated naphthalenes entered into force for most of the Parties on 15 December 2016. The information on these chemicals is expected to be reported in the fourth national report to be submitted in 2018 and is not covered in the current report.

35. With regard to DDT, PCB, PFOS, its salts and perfluorooctane sulfonyl fluoride (PFOSF), as well as BDEs (Hexabromodiphenyl ether and heptabromodiphenyl ether (hexa- and heptaBDE), tetrabromodiphenyl ether and pentabromodiphenyl ether (tetra- and pentaBDE)), there are additional separate processes for collecting information and reviewing progress. The information made available through such processes is discussed in separate sub-sections below.

**(a) Main findings**

36. According to the information contained in the NIPs and in the national reports, a majority of Parties (up to 66% depending on the chemical) provided information on having set up measures, including legal and administrative measures, to control the production, import, export and use of POPs listed in Annexes A and B that meet or exceed the Convention's requirements, either before or upon

<sup>10</sup> 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane (DDT); 1,1-dichloro-2,2-bis(4-chlorophenyl) ethylene (DDE).

<sup>11</sup> UNEP/POPS/COP.5/INF/9.

entry into force of the Convention. The percentage of Parties that have implemented measures for the newly listed POPs (21-34%) is lower than that for the legacy POPs (54-66%).

37. According to the information from the NIPs, many Parties have environmental legislation covering hazardous chemicals or pesticides in general, but not specifically the listed POPs. Many of these Parties have not submitted national reports to confirm whether they have developed or revised their regulatory framework and legislation to address listed POPs after transmitting their NIPs.

38. More Parties have implemented legal and administrative measures to control pesticides than industrial chemicals. For legacy POPs, the highest percentage was reported for DDT (65%) and the lowest for PCB (54%). The rate for PCB is lower than for other chemicals, despite the fact that PCB are one of the most widespread industrial POPs across the globe. For the newly listed POPs, the highest percentage was reported for lindane (35%) and the lowest for PFOS, its salts and PFOSF (20%).

39. A decrease in the production, use, export and import was observed for most of the POPs except for PCB, DDT, endosulfan, lindane, and PFOS, its salts and PFOSF. Among the newly listed POPs, Parties reported production, export and import of lindane, endosulfan, pentachlorobenzene, tetra and pentaBDE and PFOS, its salts and PFOSF. Most of the production and use of the initial POPs ceased before 2004, except for PCB and DDT. More than 60% of Parties reported past and ongoing use of PCB. A number of Parties (17 Parties listed in the Register) still have a need for DDT for disease vector control.

40. Even though the majority of the production of POPs pesticides ceased before 2004 and exports and imports have been banned, legacy POPs pesticides are reported to exist as obsolete stocks. Several Parties indicated in their NIPs that obsolete stockpiles of such substances may be illegally used by farmers. Mislabelling or a lack of appropriate labels (for example, because products sold to farmers are repackaged by warehouse staff) are cited as reasons for such illegal use.

41. Some Parties, in particular developing country Parties, indicated that import and use of POPs are banned but there may be illegal trafficking of POPs pesticides with unknown quantities. Indications are also provided that the naming of pesticides used among farmers is often not consistent with the official name. Some POPs pesticides are used as mixtures and the users may not be aware of the contents.

42. Information on quantities imported or exported for environmentally sound waste disposal is scarce. Among all POPs, PCB and DDT were most often exported for final disposal. Most of the reported exports of POPs for final disposal were from developing country Parties or Parties with economies in transition to developed country Parties.

43. A limited number of Parties report regulatory and assessment schemes for new pesticides and/or new industrial chemicals (more for pesticides, 14%, than for industrial chemicals, 12%). Most of the regulatory and assessment schemes take in to account the criteria in Annex D; thus they ideally would prevent production and use of new pesticides or new industrial chemicals that have the characteristics of POPs.

#### **(b) Conclusions and recommendations**

44. The increase observed in 2010 and 2012 in the number of Parties that have implemented measures for newly listed chemicals, even though not universal, provides evidence that the entry into force of an amendment for a particular chemical is a trigger for some but not all Parties to amend and implement administrative or legal measures to control the production, use, import and export of the chemical.

45. Many Parties, in particular developing country Parties, provide information in their NIPs on having general environmental legislation covering hazardous chemicals or pesticides, but fewer have legislation and/or regulations specifically designed to implement obligations regarding listed POPs. The percentage of Parties that have implemented measures for the newly listed POPs (21-34%) is lower than that for the legacy POPs (54-66%).

46. Measures to control pesticides are more widespread than for industrial chemicals. In particular, measures to control PCB are lacking in a number of countries, in particular in developing country Parties and Parties with economies in transition.

**Recommendation:** *Priority attention should be given to developing, enforcing and/or strengthening national legislation and/or regulations implementing the Convention that are appropriate for both industrial chemicals and pesticides. For legacy POPs, this recommendation is especially important for developing country Parties and Parties with economies in transition, in order to control in particular*

*industrial chemicals, with regard to their import, export and use. For the newly listed POPs, this recommendation is equally important for all Parties regardless of their economic situation. Parties need to develop or revise their national legislation and/or regulations to specifically implement obligations regarding POPs listed under the Convention.*

47. Quantitative information on the production of POPs reported by Parties is extremely limited, such that it is not possible to discuss trends. However, according to the NIPs, most production of legacy POPs ceased before 2004.

**Recommendation:** *Further development of national inventories should be encouraged among Parties to provide a mechanism for a quantitative global inventory of production, stocks and releases of POPs. Furthermore, modelling and cooperation with other chemical management initiatives should be encouraged as these approaches would contribute to a transparent and reliable global inventory which could then provide useful information on changes over time.*

48. Most of the production and use of the legacy POPs ceased before 2004, except for PCB and DDT. Past and ongoing use of PCB is still widely reported. At the current rate of activity, obligations in the Convention related to 2025 and 2028 will not likely be met by most Parties.

**Recommendation:** *Parties, which have not already done so, should be vigorously encouraged to implement legal and administrative measures to meet the obligations of the Stockholm Convention related to 2025 and 2028 for the elimination and environmentally sound management of PCB.*

49. Although production of all legacy POPs pesticides (except DDT) ceased before 2004 and all exports and imports were banned thereafter, large stockpiles exist in some Parties that are developing countries and countries with economies in transition and may be illegally used by farmers. These illegal uses may result in an ongoing risk to human health and the environment.

**Recommendation:** *All Parties should urgently develop inventories of stockpiles and manage them in an environmentally sound manner as required by Article 6. Enactment and enforcement of national legislation and/or regulations is key to this endeavour. Key in developing country Parties in particular is education for farmers about the health and environmental risks of banned pesticides.*

50. Illegal trafficking of POPs pesticides and ambiguity as to the commercial names and the composition of the mixtures in use make sound management of the banned pesticides difficult, especially for Parties that are developing countries and countries with economies in transition.

**Recommendation:** *Customs officers should receive more harmonized training on POPs pesticides identification and national obligations pertaining to the Stockholm Convention. Users of POPs pesticides and industrial chemicals should be made more aware of their risks and safe handling practices as a further means of reducing illegal trafficking.*

51. Production and/or export and import of several newly listed POPs continue, in particular for lindane, endosulfan, pentachlorobenzene, tetra- and pentaBDE, hexa- and heptaBDE and PFOS, its salts and PFOSF.

**Recommendation:** *Information on the current use of these chemicals and alternatives should be collected and shared through the Stockholm Convention information sharing and reporting mechanisms in order to accelerate their replacement and reduce their ongoing use.*

52. Information on import is much more limited than that collected on production and export. Further, reports from those exporting a substance to a country did not match the import records of the receiving country.

**Recommendation:** *Parties should provide validated information on production, import and export of POPs, including quantitative information, in the national reports required pursuant to Article 15.*

53. Among all POPs, PCB and DDT are exported for final disposal in the largest amounts. Taking into account the information related to ongoing use of PCB and DDT, it is probable that these chemicals will continue to be exported for final disposal for several years.

**Recommendation:** *Exports of DDT and PCB for final disposal should be closely monitored through the use of data gathered through the DDT questionnaire, national reporting under Article 15 of the Stockholm Convention and national reporting under the Basel Convention, in particular for the evaluation of the progress made towards the elimination of PCB as required by the Convention.*

54. While significant progress has been made to control intentional production and/or use of POPs, more remains to be done. Among the legacy POPs, DDT and PCB remain a major concern along with ongoing production and/or use of some newly listed POPs that are still on the market.

**Recommendation:** *The Secretariat should continue to undertake activities to raise awareness of the obligations of the Convention with respect to the POPs listed in Annexes A and B and provide guidance and assistance for Parties to effectively implement control measures.*

(c) **DDT: Main findings**

55. Legal measures governing the production, import, export and use of DDT are in place in the majority of Parties. Out of that number, roughly half of them have developed or amended these measures since 2001, indicating major progress due to the Convention. Nevertheless, there are indications that the implementation of legal measures, through pesticide life-cycle management, remains a major challenge in vector-borne disease endemic countries.

56. Global production of DDT declined by 29%, from 4768 tonnes of active ingredient (a.i.) per year in 2003-2008, to 3389 tonnes a.i. per year in 2009-2013. India is the only known remaining producer.

57. Global use of DDT has declined by 35% from 5034 tonnes a.i. per year in 2003-2009 to 3268 tonnes a.i. per year in 2010-2014. India has been the main user of DDT, responsible for 83% of global use in 2000-2014; in recent years, India has been responsible for an estimated 96-97% of global use. India uses DDT for control of malaria and leishmaniasis.

58. The use of DDT for malaria control in Sub-Saharan Africa has been relatively minor as compared to the use in India. Especially, in recent years, the use in Africa is estimated to be less than 100 tonnes a.i. per year; a small fraction of the global use.

59. A number of African countries have alternately discontinued and resumed use of DDT as a result of several contemporary developments, notably the up-scaling of vector control interventions, which included indoor residual spraying with DDT and the development and monitoring of insecticide resistance in malaria vectors.

60. However, insecticide resistance in malaria vectors is sweeping across Africa. This is reducing the choice of readily available insecticidal options for malaria vector control. In southern Africa, in particular, the main malaria vectors have become resistant to both pyrethroids and carbamates. This leaves only DDT and much more expensive organophosphates as immediate options for insecticidal control and for insecticide resistance management. Alternative vector control methods included in the Handbook for Integrated Vector Management (IVM) of the World Health Organization (WHO), such as house improvement and larval source management, deserve increased attention in future IVM strategies.

61. Regarding the import and export of DDT, global import for use in disease vector control shows an increase from 2001-2005, but imports reduced to much lower levels in recent years. Data on import and export do not tally and require more consistent reporting by Parties. A number of countries reported export of DDT for final disposal; destinations were mostly countries in Europe. Reporting on import for final disposal has been poor.

(d) **DDT: Conclusions and recommendations**

62. In several African countries, recent capacity building on entomological surveillance and insecticide susceptibility monitoring has prompted a timely policy change away from the use of DDT. The effectiveness of the Stockholm Convention towards achieving its global objectives regarding DDT could be further improved by focusing efforts to reduce the current high levels of DDT use in some countries. Indications of increased use of DDT for leishmaniasis control and the spread of emerging vector borne health threats point to the need for adoption of more integrated vector control methods and more education about the benefits for local communities of reducing reliance on DDT, and in developing safer, technically feasible, accessible, more effective and affordable non-POPs alternatives.

**Recommendation:** *Further capacity building is needed to improve entomological surveillance, evidence-based decision making and fine-tuned targeting of vector control interventions that would reduce the use of DDT. Integrated vector management which will lead to substantial benefits for the global environment should be encouraged.*

63. The road map for the development of alternatives to DDT (the key elements of which were endorsed by the Conference of the Parties at its seventh meeting)<sup>12</sup> provides the required framework for using safer alternatives than continued use of DDT.

<sup>12</sup> UNEP/POPS/COP.7/INF/6; UNEP/POPS/COP.7/5, annex II.



**Recommendation:** Further support is needed for the development of safer, effective and affordable alternatives to DDT and for strengthening the capacity of Parties still relying on DDT to commence a sustainable transition away from DDT.

64. Data on import and export of DDT contained in national reports do not match. Data on import for final disposal are especially poor.

**Recommendation:** Existing reporting mechanisms for DDT should be improved so that the data can be used for the specific requirements for effectiveness evaluation under the Convention, particularly the mechanism for reporting on export and import of DDT for use in disease vector control or for final disposal. In addition, collaboration with the Basel Convention's reporting system related to imports and exports for final disposal and the WHO's reporting system on public health pesticides in relation to DDT should be explored.

(e) **PCB: Main findings**

65. An estimated 1 to 1.5 million tonnes of technical grade PCB have been produced, with each tonne of technical grade PCB having generated at least 20 tonnes of waste containing or contaminated with PCB at relevant concentrations.<sup>13</sup>

66. The amount of liquids and equipment containing or contaminated with PCB eliminated by the Parties to the Stockholm Convention to date is estimated at approximately 3 million tonnes. Actual amounts eliminated could be much higher, most notably because quantitative data was not available for a large number of countries. Approximately 70% of the progress in elimination was made after the entry into force of the Convention in 2004.<sup>14</sup>

67. The amount of PCB liquids and equipment that still need to be eliminated is estimated to be about 14 million tonnes, most of which is found in transformers. Information on other applications including, in particular open applications, is limited. It is highly probable, at least in part due to low reporting rates, that the actual amounts still to be eliminated are much larger. Currently no mechanism is available under the Convention to review and monitor progress in implementation of the PCB provisions.

68. The amounts already disposed of and scheduled for disposal under the global environmental facility (GEF) projects is very small compared to the estimated total amounts still to be eliminated. Given the large amounts that still need to be eliminated, it is necessary to increase the cost-effectiveness of interventions by designing projects in a way as to strengthen human and infrastructure capacities in the long term, beyond the duration of the project.

69. Technologies and capacities for the elimination or irreversible transformation of PCB are available, with many countries already having eliminated substantial amounts of PCB either domestically or via export.

(f) **PCB: Conclusions and recommendations**

70. The Stockholm Convention, through the development of NIPs, as well as the many GEF-funded projects, had a beneficial impact on raising awareness of PCB, building national capacity and in eliminating PCB-containing liquids and equipment, but progress toward PCB elimination is slow. While some progress has been made towards the elimination of PCB, the majority of Parties are currently not on track to identify, label and remove from use equipment and liquids containing PCB by 2025 and to manage waste liquids and equipment containing PCB in an environmentally sound manner by 2028 and the number of tonnes remaining to be disposed of globally is daunting. A strong argument can be made that the scope of the challenge of achieving the elimination of use of PCB by 2025 and the environmentally sound management of PCB by 2028 has been severely underestimated at least in part due to poor reporting.

**Recommendation:** There is a need, in particular for developing country Parties and Parties with economies in transition, to strengthen their national or regional capacities for the elimination or irreversible transformation of PCB congeners and formulations.

**Recommendation:** Parties should urgently define rigorous plans for the environmentally sound management of PCB throughout its life cycle, including its elimination and destruction, and explore the optimal and most cost-effective solutions given the specific background and circumstances of each individual country.

<sup>13</sup> UNEP/POPS/COP.8/INF/10.

<sup>14</sup> Ibid.

71. Most national inventories of PCB are preliminary in scope and provide a fragmented picture. Even for closed applications, comprehensive data are often lacking. Currently no mechanism is available under the Convention to review progress in implementation of the PCB provisions.

**Recommendation:** *PCB inventories need to be undertaken in a systematic manner, in accordance with the existing guidance, and cover all types of equipment, sectors and geographical areas. Each Party should ensure that their national reports contain comprehensive, clear, reliable and well-structured data on the amounts of PCB already eliminated and, most importantly, the amounts still to be eliminated. It may be useful to establish a mechanism under the Convention to review progress in PCB elimination.*

72. The costs of eliminating the large amounts of PCB which remain are significant. Despite the current level of financing to this issue, substantial additional funding will be necessary to eliminate and destroy the amounts of PCB in use or stored if the objective of the Convention is to be met.

**Recommendation:** *GEF projects should be designed to strengthen human and infrastructure capacities for PCB elimination and destruction which will last beyond the duration of the project. Initiatives to manage PCB in an environmentally sound manner should also be designed to develop sustainable infrastructure, processes and techniques that can be used for the transportation, storage and destruction of other hazardous wastes particularly POPs wastes.*

**(g) Brominated diphenylethers:<sup>15</sup> Main Findings**

73. Limited information has been provided on the progress Parties have made towards eliminating BDEs. Several Parties report that currently there is a lack of information on environmentally sound disposal and recycling operations for BDEs. According to one study on the existence of BDEs in products and recycling processes, the materials containing BDEs are mainly in electrical and electronic equipment and cars.

74. The main challenges identified at the seventh meeting of the Conference of the Parties in the elimination of BDEs include: information gaps related to the life cycle of BDEs (in particular for imported products); a paucity of studies to identify the presence of BDEs in products and recycling processes; understanding the activities taking place at waste management and recycling facilities and identifying best management practices; the task of separation of BDEs from the wastes fraction; and, the lack of effective techniques for the screening of BDEs in the waste stream.<sup>16</sup>

**(h) Brominated diphenylethers: Conclusions and recommendations**

75. To date, limited information has been reported by Parties on progress made towards eliminating BDEs. The specific exemption for the recycling of BDEs listed in Annex A is available until 2030 at the latest, and the second evaluation of the progress that Parties have made towards eliminating BDEs and the review of the continued need for the specific exemptions will take place at the eighth meeting of the Conference of the Parties.

**Recommendation:** *In order to evaluate the progress made in elimination of BDEs, Parties and observers should provide quantitative information on articles containing BDEs, including in recycling and waste streams.*

**Recommendation:** *The guidance documents made available at the seventh meeting of the Conference of the Parties should be completed in consultation with the Basel Convention so that they can be used widely to develop more comprehensive inventories of BDEs and help with the application of best available techniques and best environmental practices for the recycling and waste disposal of articles containing BDEs.*

**(i) PFOS, its salts and PFOSF: Main findings**

76. Due to stricter legislation and control worldwide, there has been a significant drop in the production and use of PFOS, its salts and PFOSF from 2003 until today.<sup>17</sup> The most important global producer phased out the production of PFOS, its salts and PFOSF in 2003. Quantitative data on production have been available from this single major global producer so far, but it is considered that the combined capacity of the other producers was much less. The production volumes fell from around 3500 tonnes per year in 2000 to approximately 200 tonnes per year in 2001 and 2002; production was discontinued in 2003. The European Union Scientific Committee on Health and Environmental Risks

<sup>15</sup> Hexabromodiphenyl ether and heptabromodiphenyl ether (hexa- and heptaBDE), tetrabromodiphenyl ether and pentabromodiphenyl ether (tetra- and pentaBDE).

<sup>16</sup> UNEP/POPS/COP.7/8, annex IV.

<sup>17</sup> UNEP/POPS/COP.7/INF/11.

notes that use of PFOS and PFOS related substances in consumer applications such as carpets, leather/apparel, textiles/upholstery, paper and packaging, coatings, industrial and PFOS household cleaning products, pesticides and insecticides has been largely abandoned following the announcement of the main global producer to phase out manufacture and use of PFOS consumer applications. Uncertainty however remains as to the current levels of use taking into account the limited quantitative data available.

77. Providing a global overview of the production and use of PFOS, its salts and PFOSF is currently challenging. Data gaps are notable in developing country Parties and Parties with economies in transition. A majority of Parties are in the process of updating their NIPs, through which initial information on the national situation may become available.

78. Identification of products that contain PFOS is difficult, particularly in imported products. This makes it more difficult to follow the substance through its life cycle to its end of life (waste) management, and potential release to the environment.

**(j) PFOS, its salts and PFOSF: Conclusions and recommendations**

79. While a significant drop in the production and use of PFOS, its salts and PFOSF has clearly been achieved, limited information and data prevent this evaluation from providing a comprehensive global overview of production and use.

80. Phasing out the use of PFOS, its salts and PFOSF is challenging due to the paucity of information on alternative substances or methods, the lack of financial resources and insufficient technical capacity.

***Recommendation:** Parties that are developing countries and countries with economies in transition need to build their capacity to identify and collect information on PFOS, its salts and PFOSF, to strengthen the legislation and/or regulations to manage the chemicals throughout their lifecycles, and to introduce safer, effective and affordable alternatives to PFOS, its salts and PFOSF.*

**(k) Lindane and endosulfan: Main findings**

81. Safer and effective alternatives to lindane and endosulfan are commonly available. Many Parties have successfully instituted regulatory actions for banning or restricting the use of these two chemicals.

**(l) Lindane and endosulfan: Conclusions and recommendations**

82. Safer and effective chemical and non-chemical alternatives to lindane and endosulfan are available.

***Recommendation:** Guidance and technical assistance along with activities to raise awareness about the need to use alternatives, given the control measures on lindane and endosulfan, and approaches for phasing-in alternatives are further needed to ensure full transition from the reliance on these chemicals.*

**2. Measures to reduce or eliminate releases from unintentional production (Article 5)**

83. The outcome to be addressed in assessing the effectiveness of Article 5 is whether the total quantities of POPs that are produced unintentionally and released into the environment have been reduced or, where feasible, eliminated. Periodic inventories of releases of unintentionally produced POPs could also help in interpreting data on levels of POPs collected under the global monitoring plan.

84. Article 5 provides measures to reduce or eliminate releases from unintentional production of chemicals listed in Annex C to the Convention. Among the POPs listed in Annex C, PCDD/PCDF are indicative of other unintentional POPs and can be used as a basis for identifying and prioritizing sources of unintentional POPs, as well as for evaluating the efficacy of adopted mitigation measures. Therefore, PCDD/PCDF releases are considered as the key indicator for evaluating the efficacy of Article 5 of the Convention.<sup>18</sup>

**(a) Main findings**

85. The Convention has acted as a trigger for initial action planning to minimize and ultimately eliminate releases of unintentional POPs worldwide. A majority of Parties (62%) have developed their national action plans further to the entry into force of the Convention, but only a limited number of Parties (20%) have reviewed and updated their national action plans pursuant to paragraph (a) (v) of

<sup>18</sup> UNEP/POPS/COP.7/INF/19.

Article 5. Information relevant to the actual implementation of the action plans under Article 5 is limited.

86. The Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs under Article 5 of the Stockholm Convention on POPs is continuously updated based on systematic expert consultation, and can be considered as the most advanced and comprehensive compilation of emission factors for unintentional POPs. This is also confirmed by studies showing that modelling of global dispersion of PCDD/PCDF using a global inventory of emissions compiled under the Stockholm Convention reasonably reproduces observed levels of air concentrations.

87. Only one third of the Parties to the Convention seem to have phased in measures that promote (30%) or require (28%) best available techniques and best environmental practices to control their releases of unintentional POPs from priority sources, while stating lack of capacity and financial resources as the reason.

88. A minimal change (0.1%) is observed between global baseline releases (2001-2011) and updated releases (2001-2015). Overall, total releases have a positive correlation with the size of the population and a negative correlation with the economic status of the country.

89. The highest contributor to global air releases is open burning, followed by waste incineration, the metallurgical industry, and heat and power generation. Open burning is the highly dominant source of release to air in Africa, Asia Pacific and Latin America and the Caribbean, while heat and power generation along with the metal industry are the major contributors to air releases in the Central and Eastern Europe and Western European and Others Group.

90. The rate of annual decrease in releases in Central and Eastern Europe and Western European and other countries is lower than in other regions, as emissions had already been reduced prior to the entry into force of the Stockholm Convention under the obligations of the POPs Aarhus Protocol adopted in 1998 under the United Nations Economic Commission for Europe Convention on Long Range Transboundary Air Pollution (CLRTAP). Current releases in these regions are very low. Larger decreases are observed in the other regions, where action to minimize such releases was taken more recently pursuant to the Stockholm Convention.

**(b) Conclusions and recommendations**

91. Releases of unintentional POPs have been successfully reduced in some regions by regulations that predated the Convention and have been maintained since. By requiring similar actions to be taken at the global level, the Convention is expected to result in decreasing levels of unintentional POPs releases in all regions of the globe. Currently less than one third of the Parties are promoting or requiring best available techniques and best environmental practices to control their releases of unintentional POPs from priority sources.

***Recommendation:** Parties should develop and maintain up-to-date their action plans to minimize and ultimately eliminate releases of unintentionally produced POPs. Actions should be taken to enhance implementation of requirements for the use of best available techniques and best environmental practices for the priority sources identified.*

92. Inventories of sources and releases provide the main basis for assessing the effectiveness of Article 5 of the Convention. Overall, release estimates reported pursuant to Article 15 or through the NIPs, are difficult to compile, process, and most of all, analyze due to a number of limitations. In particular, to enable the assessment of trends over time, comparable data are needed for at least two points in time. The Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs under Article 5 of the Stockholm Convention on POPs provides useful guidance to this end.

***Recommendation:** Parties should pay more attention to issues related to quality assurance/quality control (QA/QC) of inventories and consistency and comparability of data reported for various reference years. The process for updating release estimates in order to reveal trends over time should be considered in conjunction with the revision (recalculation or correction) of previous release estimates. The Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs under Article 5 of the Stockholm Convention on POPs should be used for this purpose.*

93. Time series data confirming trends over time in releases of unintentionally produced POPs are limited, particularly for developing country Parties, but some initial results showing decreases over time have been obtained to date.

**Recommendation:** Parties should develop and update their inventories of unintentional POPs, and provide the information as part of their national reports to confirm the success of the measures they have taken to implement Article 5.

### 3. Measures to reduce or eliminate releases from stockpiles and wastes (Article 6)

94. The outcome to be addressed in assessing the effectiveness of Article 6 is whether there has been a reduction in the levels of POPs being released into the environment from stockpiles and wastes.

95. The information relevant to Article 6 was collected from the third, second, or first national reports or the NIPs. As of 30 April 2016, of the 180 Parties to the Stockholm Convention, 164 Parties had submitted at least one of the four sources of information.

96. The Conference of the Parties to the Basel Convention has adopted (decision BC-12/3) several guidance documents on POPs in waste to assist Parties. In addition, the Conference of the Parties to the Basel Convention adopted, on an interim basis, technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment (decision BC-12/5).

#### (a) Main findings

97. While some Parties have made progress in terms of developing strategies, measures and actions in the area of management of stockpiles and wastes, to identify stockpiles, products and articles in use, and wastes containing POPs, only a limited number of Parties report having such measures in place and even more limited information is available regarding the type of the measures or on the identification and disposal of wastes containing POPs.

98. Quantitative information on stockpiles and POPs wastes being managed in an environmentally sound manner is limited, but sufficient to point to the need for further action. For PCB, only an estimated 17% of the total global mass has been eliminated.

99. Among the legacy POPs listed under the Convention, PCB and DDT are most often exported for final disposal, followed by toxaphene, dieldrin, and heptachlor. Most of the reported exports for POPs for final disposal were from developing country Parties or Parties with economies in transition to developed country Parties. Taking into account the information on ongoing use of PCB and DDT, it is possible that those chemicals will continue to be exported for final disposal in coming years.

100. Information is even more scarce for the newly listed POPs (BDEs and PFOS), as their identification in products is difficult, particularly in imported products. This makes it more challenging to follow the substance throughout its life cycle including its end of life management.

101. Identification and appropriate management of contaminated sites has been triggered by the Convention. 39% of the Parties to the Convention indicated they have identified contaminated sites, even though, according to the Convention's provisions, they are only required to endeavour to develop strategies to identify such sites. A limited number of Parties (18%) have voluntarily undertaken remediation activities, as these are not required by the Convention. When such remediation is undertaken, however, the Convention requires that it be done in an environmentally sound manner, and therefore Parties could benefit from help in developing competencies, cooperation and mobilization of resources to avoid further releases.

#### (b) Conclusions and recommendations

102. Due to the nature of wastes whereby most of the data collected are limited and restricted to a particular point in time in the life-cycle, and considering that wastes contain mixtures of substances, it is difficult to identify a specific quantity of wastes containing a specific POP which has been destroyed. In view of the limited data available, it is difficult to provide a quantitative global picture of wastes identified and destroyed over time, or otherwise disposed of, which is the major factor for assessing the effectiveness of this aspect of the Convention.

**Recommendation:** Data collection mechanisms for determining how much of specific POPs wastes has been destroyed or otherwise appropriately disposed of, should be improved, in particular through working more closely with the Basel Convention to give more focus to the work on POPs wastes inventories, through the Basel Convention's POPs Technical Guidelines and its national reports which are required to provide details on exports and imports for individual waste streams.

103. According to estimates, only a limited proportion of known POPs wastes and stockpiles upon becoming wastes, in particular POPs pesticides and PCB, have been eliminated to date.

**Recommendation:** Parties need to accelerate their efforts for sound management of POPs stockpiles and wastes, including their further identification, and prepare plans of action that prioritize disposal of waste.

## C. Processes supporting control measures

### 1. Specific exemptions and notifications of production and use (Article 4)

104. The outcome to be addressed in assessing the effectiveness of Article 4 is whether Parties have transitioned to alternative products and processes within the allowed time period.

#### (a) Main findings

105. The number of Parties registered for specific exemptions for chemicals in commerce is low. As information transmitted to the Secretariat on the production and use of these chemicals is very limited, it is highly probable that some Parties may be continuing to produce and use the chemicals listed in the Annexes to the Convention without registration for specific exemptions.

106. No extensions of registrations of specific exemptions have been granted to date after the five year exemption period. The lack of any request for extensions of registrations of specific exemptions could be an indicator of less reliance on POPs and of a transition to alternative products and processes within the allowed time period. It is also possible that not all Parties that are in need of such exemptions have notified to the Secretariat to register for those exemptions, thus making a request for an extension unnecessary.

107. Furthermore, it is important to note that several Parties have expressed a continued need for certain specific exemptions and that the Conference of the Parties continues to evaluate the continued need for chemicals for the various acceptable purposes and specific exemptions e.g. DDT; PFOS, its salts and PFOSF; and BDEs.

#### (b) Conclusions and recommendations

108. Parties must register for specific exemptions at the time they become bound to the Convention and/or its amendments, if such need is identified. The number of Parties registered for specific exemptions for the newly listed POPs in commerce is lower than expected and no extensions of registrations of specific exemptions have been requested to date. Failure to claim an exemption for a listed substance that is being utilized by a Party has the potential to constitute a large gap in the Convention's information base, and represents non-compliance with the Convention.

***Recommendation:** Awareness raising activities, such as webinars, immediately after the adoption of an amendment at a COP, should be routinely organized by the Secretariat in order to remind Parties about domestic actions necessary to implement their obligations within one year from the date of communication by the depositary of the amendment to Annexes A or B, including the need to assess whether they need to claim an exemption. Such webinars should include an explanation of why the claiming of exemptions is important to track not only overall effectiveness of the Convention's controls, but also the impact on other Parties' ability to enforce their laws on import of listed chemicals. Improving and even automating some aspects of communication with Parties (i.e. tracking and alert systems) could assist in making exemption reporting more meaningful and successful.*

### 2. Listing of chemicals in Annexes A, B and C (Article 8)

109. The outcome to be addressed in assessing the effectiveness of Article 8 is whether the review process is capable of identifying new POPs for listing in the annexes to the Convention as recommended by the POPs Review Committee.

110. The successful implementation of this article is necessary to ensure that the Convention remains a living agreement and deals with substances known to have persistent organic pollutant properties. A success parameter is the completion of the review of chemicals and the eventual listing of new POPs.

#### (a) Main findings

111. The operation of the process laid out in Article 8 for listing chemicals in Annexes A, B and/or C resulted in the listing of 14 additional chemicals in the Stockholm Convention over 11 years.

112. All the chemicals recommended by the POPs Review Committee for listing have been adopted by the Conference of the Parties. Up until the seventh meeting of the Conference of the Parties, all chemicals and related control measures were adopted by consensus. At its seventh meeting, when all efforts at achieving consensus were exhausted, as a last resort, the Conference of the Parties called for a vote for the first time ever on pentachlorophenol and its salts and esters, which, as a result of the vote, was listed under the Convention.

**(b) Conclusions and recommendations**

113. With the addition of 14 new substances to the list of legacy POPs globally banned or restricted under the Convention at the time it entered into force, the operation of the process for listing new substances in Annexes A, B and/or C can be considered successful. The recommendations for listing are made by the POPs Review Committee based on risk profiles and risk management evaluation documents. Those documents are prepared on the basis of available peer reviewed literature and the information and comments submitted by Parties and observers. There has recently been recognition of the need to seek improvements in the quality, quantity, breadth and timeliness of information submitted by Parties and observers, for consideration by the Committee during its preparation of draft risk profiles and draft risk management evaluations.

*Recommendation: Parties and observers should provide adequate and timely information to the Secretariat for the use of the POPs Review Committee to support it in the development of sound supporting documents and recommendations to the Conference of the Parties on the listing of new substances.*

**D. Enhancing understanding****1. Information exchange (Article 9)**

114. The outcome to be addressed in assessing the effectiveness of Article 9 is whether Parties have access to the information that they need on POPs and their related issues, and whether that information has helped them to meet their obligations under the Convention.

115. Given the diverse and often informal methods used to disseminate information, it is very difficult to measure the impact of information exchange measures. Obtaining comparable data on outcome indicators or specific activities on a global scale would require a coordinated approach and significant investment. No outcome indicator has therefore been included for this element.

116. Sources of information reviewed for this evaluation include the national focal points and official contact points nomination forms submitted to the Secretariat, the national reports submitted pursuant to Article 15 from either the third, second, first national reports, NIPs, various reports extracted from the Secretariat information systems, and the activity reports submitted by the Stockholm Convention regional centers.

**(a) Main findings**

117. Progress has been achieved through the ongoing work on a clearing-house mechanism for the Basel, Rotterdam and Stockholm conventions. As of 2015, new information systems have been developed including a joint calendar, joint contact and expert database, joint scientific and technical publications, webinar library and online reporting serving the three conventions, resulting in significant enhancements to the conventions' websites and knowledge management capacity.

118. Most Parties have established information exchange processes with the Secretariat and nominated national focal points. As a result, a majority of Parties and regional centers are actively contributing to the clearing-house mechanism by submitting information to the Secretariat. This information is then accessed by a fair number of stakeholders through the clearing-house mechanism.

119. A majority of Parties are also engaged in information exchange activities with the regional centers. However, the nature, scope, quality, reach and impact of those information exchange activities are not specified and therefore a full analysis of the extent to which the objectives of the Convention are being met, is not possible.

**(b) Conclusions and recommendations**

120. The provisions of Article 9, particularly nomination of national focal points and the establishment of the clearing-house mechanism, have contributed to increased information exchange and awareness on POPs issues globally. A majority of stakeholders are actively contributing to the clearing-house mechanism.

*Recommendation: Parties should continue to exchange information through the clearinghouse mechanism. User surveys on the content, quality and impact of information exchange activities could be performed. Such surveys should be conducted in a cost efficient way e.g. through online questionnaires.*

**2. Public information, awareness and education (Article 10)**

121. The outcomes to be addressed in assessing the effectiveness of Article 10 are the extent to which the public and stakeholders are informed by access to information on the effects of POPs and

their sound management and alternatives, and whether public awareness on issues related to POPs, as well as understanding of the Convention, its procedures and achievements has improved.

122. Public awareness is an important factor for the effective implementation of the Convention. Obtaining comparable data on outcome indicators or specific activities on a global scale would, however, require a coordinated approach and significant investment. No outcome indicator has therefore been included for this element.

**(a) Main findings**

123. There has been an increase in the number of Parties having taken measures regarding public information, awareness and education. While some Parties had taken such measures before the Convention was adopted in 2001, more Parties, particularly those that are developing country Parties and Parties with economies in transition, have adopted such measures post entry into force of the Convention.

**(b) Conclusions and recommendations**

124. The Convention has clearly triggered action by Parties on public information, awareness and education. Through such initiatives spreading widely at the global level, such as the Chemical Information Exchange Network, awareness on the issue of POPs has increased over time, as also demonstrated by measurements showing decreasing trends of concentrations of POPs in the environment and in humans.

*Recommendation: Parties should continue to implement activities targeted at increasing public information, awareness and education on POPs, including as new POPs are being listed in accordance with Article 8. More focus on the activities directed towards public and educational institutions should be encouraged and monitored.*

**3. Research, development and monitoring (Article 11)**

125. The outcome to be addressed in assessing the effectiveness of Article 11 is whether Parties have undertaken research, development, monitoring and cooperation pertaining to POPs, chemicals proposed for listing and alternatives, and whether those activities have assisted Parties to better fulfil their obligations under the Convention.

126. An indicator for this element could be the number of initiatives by Parties to implement Article 11, including research, development, including best practices and techniques, or monitoring of environment and health. It is recognized that monitoring and assessment activities contributing to the global monitoring plan are relevant to the implementation of this article and that the regional and global monitoring reports do provide information that is relevant to the evaluation. Given the difficulty of accurately assessing the effect of the information produced by various initiatives in contributing to the Parties' fulfilment of their obligations, no outcome indicator has been included for this question.

**(a) Main findings**

127. Research and development initiatives on POPs have clearly been triggered worldwide by the Convention. A significant increase in the number of scientific articles on the topic can be observed over the last three decades further to the adoption of two major treaties to protect human health and the environment from these chemicals: the Aarhus Protocol on POPs under the CLRTAP and the Stockholm Convention.

128. In the case of developing country Parties, capacity building activities conducted in the frame of the global monitoring plan enabled activities related to the identification of the presence, levels and trends in humans and the environment and environmental transport, fate and transformation. Through providing inventory guidance, the Convention also worked towards global identification of sources and releases of POPs into the environment.

**(b) Conclusions and recommendations**

129. Since its entry into force, the Stockholm Convention has, without any doubt, acted as a catalyst for POPs research, monitoring and modelling activities worldwide. The Convention has also been successful in bringing together research findings from around the world, and enhanced awareness and knowledge about POPs. Capacity building activities have been mobilized to enable Parties to conduct research and monitoring on POPs and therefore enable effective participation of developing country Parties, including at the regional level, in the process for effectiveness evaluation. There is a need for sustained capacity building activities to strengthen national scientific and technical research capabilities in developing country Parties.



**Recommendation:** *Research, monitoring, modelling, risk evaluation and data sharing should be sustained in the long term, and even enhanced in developing country Parties, including at the regional level, to advance national and regional capacities. Capacity building activities to strengthen national scientific and technical research capabilities in developing country Parties should be sustained.*

## **E. Support for implementation**

### **1. Technical assistance and financial resources (Articles 12–14)**

130. The outcomes to be addressed in assessing the effectiveness of Articles 12–14 relate to: the provision of timely and appropriate technical assistance and technology transfer; the adequacy of financial resources to meet the incremental costs of implementing obligations under the Convention; and, the effectiveness of regional centres in facilitating capacity building, technical assistance and technology transfer in the regions.

131. Fourteen indicators have been identified for these outcomes. Many of the indicators are helpful in assessing these outcomes, but it should be noted that the work undertaken in the context of the review of the financial mechanism under paragraph 8 of Article 13 could inform these indicators or vice versa. Relevant information for effectiveness evaluation is contained in the reports of reviews of the financial mechanism; in particular, the third review has been taken into account.<sup>19</sup>

#### **(a) Technical assistance (Article 12): Main findings**

132. The number of Parties having reported providing technical assistance pursuant to Article 12 of the Convention stayed relatively constant over the period 2008-2015; a certain decrease was observed between 2011 and 2014. On the other hand, the information derived from the implementation of GEF projects does not point to a decrease in technical assistance.

133. From the number of GEF projects, including a technical assistance or technology transfer component, and the data derived from the technical assistance activities of the Secretariat, it is apparent that technical assistance and technology transfer continues to be a key priority of developing country Parties and Parties with economies in transition.

134. Sixteen regional centres have been established and have been active to varying degrees in the provision of technical assistance and technology transfer within their regions. The 2015 evaluation of their performance and sustainability points to only a few centres needing further support to reach expected standards.

#### **(b) Technical assistance (Article 12): Conclusions and recommendations**

135. The information provided by Parties on technical assistance and technology transfer is limited; it does not match the numbers of trained persons listed in Secretariat reports on technical assistance activities, nor through surveys relating to technical assistance requests, nor when GEF projects are included in the assessment. The number of activities linked to technology transfer and technical assistance, in particular through regional centres, is likely even higher.

**Recommendation:** *There is a need to strengthen the gathering of information through national reports under Article 15, on the provision of technical assistance and technology transfer through the Secretariat's technical assistance programme, GEF projects and other sources. This could also include information on how these activities impacted Parties' capacities to fulfil their obligations under the Stockholm Convention.*

136. Capacity building and technical assistance in developing country Parties and Parties with economies in transition will continue to be a priority, in particular for the development and/or strengthening and enforcing of national legislation and/or regulations implementing the Convention, to introduce safer and affordable alternatives to the POPs still on the market, to identify and manage POPs stockpiles and wastes, and, as appropriate, contaminated sites. Regional delivery, including through Stockholm Convention regional and subregional centres, are key to further the efforts in the above fields.

137. At its seventh meeting, the Conference of the Parties evaluated, in accordance with its approved criteria, the performance and sustainability of the Stockholm regional and subregional centres and called for sustained efforts to enhance their performance and actions in supporting developing country Parties. The Conference endorsed all 16 Stockholm regional and subregional centres for another four years. The report on the next evaluation of the centres will be considered at the ninth meeting of the Conference of the Parties in 2019. Some centres still face challenges and will be enhanced if Parties,

<sup>19</sup> UNEP/POPS/COP.6/23; UNEP/POPS/COP.6/INF/25.

as well as other regional centres in a position to do so, cooperate and support those regional centres through the exchange of best practices, the provision of technical assistance and the promotion of technology transfer. Sustainable financial and technical resources are necessary for the centres to succeed in their work under the Convention.

**Recommendation:** *There is a need to strengthen technical assistance and technology transfer activities, including through regional delivery and effective and efficient cooperation with the regional centres. The aim should be an efficient and effective network of centres through greater institutional coordination and the promotion of the exchange of information, lessons learned and cooperation among them on areas of expertise in which they provide assistance, through regular communication, including meetings of the centres and increased use of other means of communication.*

*Technical assistance activities, highlighted throughout this report, include the following priority areas:*

- (a) *Identifying, collecting and sharing information on POPs, in particular those still in use and those newly listed, including through existing programmes and processes;*
- (b) *Strengthening data collection mechanisms and methods for establishing and maintaining reliable inventories (also contributing to reporting);*
- (c) *Developing and strengthening legislation and/or regulations to implement the Convention to manage the chemicals throughout their lifecycles;*
- (d) *Strengthening technical assistance to implement best available techniques and best environment practices;*
- (e) *Introducing guidance and methodologies for phasing in safer and affordable alternatives;*
- (f) *Identifying and managing stockpiles and wastes and, as appropriate, contaminated sites.*

**(c) Financial resources (Articles 13 and 14): Main findings**

138. From 2002 to 2018, programming targets for the third, fourth, fifth and sixth replenishment of the GEF Trust Fund amounted to USD 1,300,000,000. As at 6 October 2016, recipient countries of the GEF have received a total of USD 857,844,838 in GEF resources committed to POPs projects. All 149 recipient countries that have requested financial resources from the GEF within this period, have received financial resources from its Trust Fund.

139. The third review of the financial mechanism conducted in 2013, points to responsiveness to growing needs for funding for POPs by increased allocated resources, although there is still a gap between funding provided for POPs activities through the GEF and the funding identified by Parties as needed to fulfil Convention obligations. The above review encouraged the Conference of the Parties to improve its process of assessing the funding needed by developing country Parties and Parties with economies in transition to implement the Convention. Country priorities were generally perceived as adequately reflected in projects funded by the GEF, and Parties were felt to be adequately involved in the project development and design process. The above review found that the GEF has been fully responsive in terms of providing information on project approvals and resources committed, including co-financing data. It stated that almost USD 1.5 billion have been committed to POPs projects through co-financing sources and that co-financing has increased from USD 1.97 per dollar of GEF grant in the second review period, up to USD 4.02 per dollar of GEF grant in this review period. The review concluded that this trend reflected the shift in the POPs portfolio from planning (i.e., NIPs) to implementation.

140. From 2000 to 2008, the USD 20-million Canada POPs Fund was established to assist developing country Parties and Parties with economies in transition in dealing with POPs and in taking initial actions to prepare for implementing the Convention.

141. From 2004 to 2015, contributions to the Stockholm Convention general trust fund (SCL) amounted to USD 40,880,843. In the same period, contributions to the Stockholm Convention voluntary special trust fund (SVL) amounted to USD 22,332,052. Contributions to SVL have seen an increase in the current and last biennium compared to the levels provided in 2006 and 2007. Projections for the biennium 2016/2017 suggest a decline in the voluntary funding, which is mainly due to the changing funding priorities within and outside of the chemicals and waste cluster.

**(d) Financial resources (Articles 13 and 14): Conclusions and recommendations**

142. For the effectiveness evaluation of Articles 13 and 14, indicators may need to address what are the eligible needs, how much funding is available to meet the needs, and how funding is being disbursed. Evaluations conducted by other entities such as the evaluation of projects by the GEF or by

the regional centres, the reviews of the financial mechanism and of the regional centres, and information regarding the integrated approach for financing of chemicals all help inform the effectiveness evaluation in a reliable and cost effective manner. With new chemicals being added to the Convention every two years and several implementation challenges for the POPs already listed, there is a need to increase funding to support implementation of new obligations under the Convention. A gap still appears to exist between funding provided through the GEF and the funding needed by developing country Parties and Parties with economies in transition to enable them to meet the agreed full incremental costs of implementing measures which fulfil their obligations under the Convention.

**Recommendation:** *The financial mechanism of the Convention, including the GEF in its capacity as principal entity entrusted, on an interim basis, with the operations of the mechanism, and other donors, should consider ways to provide additional sustainable financial resources to continue to support and enhance the implementation of the Convention by developing country Parties and Parties with economies in transition, over the long term.*

*The entities entrusted with the financial mechanism should continue to consider in their programming of areas of work the following priority areas, as highlighted throughout this report:*

- (a) *The development and deployment of products, methods and strategies as alternatives to POPs;*
- (b) *The restriction of DDT production and/or use for disease vector control in accordance with WHO recommendations and guidelines on the use of DDT and when locally safe, effective and affordable alternatives are not available to the Party in question;*
- (c) *The elimination of the use of PCB in equipment by 2025;*
- (d) *The environmentally sound waste management of liquids containing PCB and equipment contaminated with PCB, having a PCB content above 0.005 per cent, in accordance with paragraph 1 of Article 6 and part II of Annex A to the Convention, as soon as possible and no later than 2028;*
- (e) *The introduction and use of best available techniques and best environmental practices to minimize and ultimately eliminate releases of unintentionally produced POPs;*
- (f) *The development and/or strengthening of national legislation and/or regulations to specifically implement obligations regarding POPs listed under the Convention;*
- (g) *The review and update of NIPs, including, as appropriate, their initial development.*

## **F. Measuring success**

### **1. Implementation plans (Article 7)**

143. The outcome to be addressed in assessing the effectiveness of Article 7 is whether the establishment of NIPs has resulted in full implementation of the Convention. The individual NIPs are available on the Convention's website at:  
<http://chm.pops.int/Implementation/NIPs/NIPTransmission/tabid/253/Default.aspx>

144. Several guidance and draft guidance documents have been prepared for assisting Parties with the development and updating of NIPs.

#### **(a) Main findings**

145. As of April 2016, twelve years after the entry into force of the Convention, a majority of Parties (91%) have transmitted their NIPs addressing the 12 initial POPs. Based on regular monitoring of NIP transmission dates, the initial high rates with which the NIPs were transmitted have slowed down over time. For most Parties, the deadline to transmit the updated NIPs addressing amendments adopted at the fourth and fifth meetings of the Conference of the Parties has passed. Only 38 Parties have transmitted their updated NIPs addressing amendments adopted at the fourth meeting of the Conference of the Parties (i.e. 23% of Parties under the obligation to do so). Only 32 have transmitted their NIPs addressing amendments adopted at the fifth meeting of the Conference of the Parties (i.e. 20% Parties which are under the obligation to do so).

#### **(b) Conclusions and recommendations**

146. A large majority of Parties (91%) have transmitted their NIPs addressing the 12 initial POPs; for developing country Parties this was supported by funding provided by the GEF, co-financed by the Parties. The NIP development process has helped Parties to establish a network of national stakeholders, conduct an analysis of the baseline situation, including inventories, and identify national

priorities with regards to the management of POPs, as well as consider measures to implement obligations pursuant to the Convention. In addition, the NIP is an important tool for raising awareness and providing information to the public, as well as for communication with donors to raise funds to implement strategies and action plans identified in the NIP.

**Recommendation:** *The process for review and updating the NIPs in developing country Parties and Parties with economies in transition should continue to be funded with priority by the financial mechanism of the Convention, including the GEF in its capacity as principal entity entrusted, on an interim basis, with the operations of the mechanism.*

147. Article 15 reports are a tool to report on progress in implementing the NIPs. While ensuring flexibility for countries to prepare their NIPs, electronic templates could be developed for certain parts of the implementation plans containing quantitative information, such as action plans and inventories, harmonized with the reporting under Article 15. This would allow better and more reliable analysis of the data, as well as the identification of trends and emerging needs. It would also enable Parties to expedite the review and/or update of their NIPs.

148. Parties seem to be having difficulties in revising and updating their NIPs to address the newly listed POPs. In particular, many countries seem to be facing challenges in identifying these newly listed POPs in products and articles.

**Recommendation:** *All Parties should enhance their efforts to update NIPs. Developed country Parties could contribute by supporting activities such as face-to-face training and targeted NIP-development technical assistance. The development of an electronic template for quantitative information contained in the NIPs, harmonized with the reporting under Article 15, would support Parties in meeting their obligations to prepare, review and/or update their NIPs.*

## 2. Reporting (Article 15)

149. The outcome to be addressed in assessing the effectiveness of Article 15 is whether the Conference of the Parties has the necessary information to assess whether Parties are implementing the Convention.

150. Reporting under Article 15 was a major source of information for the effectiveness evaluation as it provides Parties' data on their implementation of the Convention. If an insufficient number of Parties report on time, or if insufficient information is included in the national reports, both the effectiveness evaluation and compliance assessment will be impeded.

### (a) Main findings

151. Only a small proportion of the Parties provided their reports as required under Article 15. Between the three national reports required to date, 110 Parties (61%) have reported and 70 Parties (39%) have never reported. Overall, only 40% of the Parties reported in the third cycle as compared with 55% in the second and 31% in the first. The decrease in the number of reports submitted by Parties between the 2nd and the 3rd cycle can be explained, among other challenges, by the difficulties in accessing and using the new electronic reporting system.

152. The majority of the Parties that submitted national reports (64-95%) have successfully completed their NIPs.

153. The majority of Parties had difficulties in providing complete national reports and/or provided data that was clearly erroneous or inconsistent.

154. The format of the national reports has been revised taking into consideration the framework for the effectiveness evaluation and considering the information requirements pursuant to the Convention to serve the needs of the Conference of the Parties for the purposes of Article 16; both the framework and the revised reporting format have been adopted in 2013, by decisions SC-6/22 and SC-6/21, respectively.

### (b) Conclusions and recommendations

155. Reporting under Article 15 is supposed to constitute a major source of information to assess whether Parties are implementing the Convention. This serves the dual purposes of compliance assessment under Article 17 and effectiveness evaluation under Article 16 of the Convention. The timeliness, completeness and quality of the national reports submitted by Parties are also essential to support the evaluation and compliance process. The present evaluation was hampered by the limited available data from national reports. This will continue to hamper future evaluations until the situation is substantially improved. Some of the information that would have been helpful in conducting this evaluation was not part of the current reporting format, such as information on the extent to which the

Convention is being implemented through legal or administrative measures and which of these measures are enforced, and data on POPs use.

***Recommendation:** The Secretariat should develop and present its refined strategy to enhance reporting, taking into account the comments made in this report, to assist Parties in providing data and information that are useful for compliance assessment and the effectiveness evaluation and to enable them to establish a QA/QC process for reported data. Furthermore, there is an urgent need for validation of reported data with the reporting Party, as part of the final reporting process.*

156. There is a range of potential avenues to be explored for improving reporting rates and communication with Parties, e.g., identifying focal points, and their alternates and communicating upcoming deadlines and available resources to assist with reporting. Compliance mechanisms under other multilateral environmental agreements have proven to be successful in addressing reporting requirements, as were technical and financial support provided to Parties for the preparation of the report, and the availability of dedicated staff in countries tasked to prepare and submit the reports. The Special Programme can act as an additional funding mechanism for supporting chemicals management under the Conventions for institutional strengthening, including improving national reporting. The role of the regional centres in assisting and training countries in this area could be strengthened and regional coordination improved.

***Recommendation:** Once the Conference of the Parties has approved a compliance mechanism under Article 17, a priority focus of the compliance work programme should address the issue of improving reporting.*

### **3. Non-compliance (Article 17)**

157. At the time of the writing of this report, the Conference of the Parties has not approved procedures and institutional mechanism for determining non-compliance with the provisions of the Convention and for the treatment of Parties found to be in non-compliance. Accordingly, there is no information currently available on non-compliance provided through these procedures which are to be adopted, as per Article 17, “as soon as practicable”.

#### **(a) Main findings**

158. The lack of a compliance mechanism impacts the Convention’s operations in a number of ways. First, there is no accurate assessment of implementation levels although evidence based on the lack of reporting suggests that it is no higher than 40%. Second, this has left a key gap in implementation and compliance as well as in information for the effectiveness evaluation. Work in compliance committees in other multilateral environmental agreements has successfully contributed to increasing the reporting rates. In the case of the Stockholm Convention, lacking a committee of Parties, the Secretariat was instead tasked to develop and refine a strategy to improve reporting rates. The absence of an established compliance mechanism has resulted in large gaps in information on whether Parties are meeting their obligations under the Convention. Such information is crucial in determining whether the Convention is effective in meeting its objective, as it would provide information for determining non-compliance with its provisions. If all Parties move towards full compliance, and there remain significant levels of listed POPs in the environment, then this could suggest that current Convention controls do not sufficiently address the problem of POPs.

159. Compliance mechanisms have been useful in improving the implementation and effectiveness of many other conventions, as evidenced for instance under the Basel Convention where the Implementation and Compliance Committee has addressed systemic implementation and compliance issues affecting many Parties, as well as providing advice and assistance to individual Parties facing implementation and compliance difficulties.

160. The Convention cannot be considered fully implemented at the international level without Article 17 procedures and mechanisms in place. In fact, this is the only aspect of the Convention that has not yet been implemented by the Conference of the Parties. In line with decision SC-7/26, the Conference of the Parties will consider further at its eighth meeting the adoption of the procedures and mechanisms on compliance required under Article 17, on the basis of the draft texts annexed to that decision.

#### **(b) Conclusions and recommendations**

161. A compliance mechanism is urgently needed for the Stockholm Convention in order to support core transparency and accountability functions under the Convention as well as support the Conference of the Parties in assessing whether the Convention is effective in achieving the objective agreed to in Article 1. As in other multilateral environmental agreements, such a mechanism would provide the Conference of the Parties with a subsidiary body that could identify systemic issues of

non-compliance affecting many Parties, and could assist individual Parties to address compliance challenges.

*Recommendation: A compliance mechanism should be established at the eighth meeting of the Conference of the Parties so that it can begin generating compliance information to serve the next effectiveness evaluation and provide the implementation and compliance services that will benefit Parties.*

#### 4. Effectiveness evaluation (Article 16)

162. The outcome to be addressed in assessing the effectiveness of Article 16 is whether the effectiveness evaluation is providing useful analysis on the extent to which the Convention is achieving its objective of protecting human health and the environment from POPs; how well specific measures are contributing to achieving this objective; and identification of ways to improve the effectiveness of the Convention.

163. An assessment of the quality and quantity of the available data can help to identify areas for improvement that would strengthen future evaluations. The shortage of reporting data and the absence of compliance information will limit the ability of the effectiveness evaluation to provide useful analysis. Reviewing the uptake of recommendations made in a previous evaluation can help to assess whether the evaluation has proved useful.

##### (a) Main findings

164. A number of processes are in place to support the first cycle of the effectiveness evaluation, while others are still needed, or need improvement. The global monitoring plan is an example of successful implementation of the provisions of Article 16, providing useful data on the presence of POPs in the environment and in humans. While national reports under Article 15 have been collected since 2006, the reported information is very limited for effectiveness evaluation. Procedures and institutional mechanism for determining non-compliance are not yet in place and compliance information is therefore not available for this evaluation.

165. Besides POPs monitoring data, the global monitoring programme has also generated positive outcomes in several other areas of implementation of the Convention through enhanced knowledge and increased scientific competence and awareness. This indicates that the science based integrated approach of the Convention is working well. Because of the lack of information from national reports and the lack of compliance procedures and mechanisms; however, it is difficult to fully evaluate the progress being made under the Convention in achieving its objective.

##### (b) Conclusions and recommendations

166. The global monitoring plan provides the necessary environmental monitoring information to fully support the evaluation of the effectiveness of the Convention.

*Recommendation: The global monitoring plan should be sustained in the long term to enable it to continue to provide valuable data for effectiveness evaluation. See also recommendation in paragraph 31 above (Section II.A.1. Protecting human health and the environment - Article 1).*

167. Reporting under Article 15 is a major source of information for effectiveness evaluation under Article 16; however, current reporting under Article 15 is insufficient. The present evaluation was severely restricted by the limited available data from national reports.

*Recommendation: Effective strategies should be put in place by the Conference of the Parties to improve reporting rates and provide critical information and data for the effectiveness evaluation. See also recommendation in paragraph 155 above (Section II.F.2. Reporting - Article 15).*

168. The lack of a compliance mechanism impacts the Convention's operations in a number of ways, most notably by leaving a key gap in information for the effectiveness evaluation.

*Recommendation: Procedures and institutional mechanisms for compliance should be established urgently in order to generate compliance information to serve the next effectiveness evaluation. See also recommendation in paragraph 161 above (Section II.F.3. Non-compliance - Article 17).*

169. The adopted procedure for effectiveness evaluation provided a good basis for conducting the first evaluation cycle. Based on the experience from the present evaluation, the framework can be improved and streamlined for future evaluations. Recommendations for amendments to the framework are provided in a separate report.<sup>20</sup>

<sup>20</sup> UNEP/POPS/COP.8/INF/41.

*Recommendation: The framework for effectiveness evaluation should be amended in accordance with the recommendations of the effectiveness evaluation committee.*<sup>21</sup>

## **G. General and cross-cutting issues**

170. The evaluation also considers more general or cross-cutting questions of effectiveness, which do not relate to specific Articles, but to the effectiveness of the Convention as a whole, e.g., roles of Parties and non-Parties, overall governance of Convention obligations, issues with POPs in products, and identification and evaluation of alternatives.

### **1. Parties and non-Parties**

#### **(a) Main findings**

171. With regards to the obligations described in this report related to paragraph 2 of Article 3 on exports of chemicals listed in Annex A or B, the term “non-Party” includes Parties that have not agreed to be bound by the amendments to the Convention with respect to a particular chemical. For all other purposes throughout the report, the term “non-Party” shall be understood to refer to States and/or regional economic integration organizations that have not agreed to be bound by the Convention overall.

172. As at 30 April 2016, the amendments to Annexes A, B and C to the Convention adopted in 2009, 2011 and 2013 have entered into force for 93%, 92% and 89% of the Parties to the Convention respectively, while those amendments have not yet entered into force for 13, 14 and 19 Parties to the Convention respectively. Those Parties to the Convention which are not yet bound by the amendments are considered ‘non-Parties’ with regard to the particular chemical. Since non-Parties do not have to report on these chemicals, no information is available. No additional information is available to further assess non-Party states’ potential current production, uses, imports, exports and/or emissions of POPs.

173. From the Parties that reported export of POPs for permitted uses, two reported such export to a destination country that was not a Party to the Convention.<sup>22</sup> From the Parties that reported imports, seven reported such import from a country of origin that was not a Party to the Convention.<sup>23</sup> To date, only one certification of non-Party imports had been transmitted to the Secretariat by a Party pursuant to paragraph 2 (b) of Article 3.<sup>24</sup>

#### **(b) Conclusions and recommendations**

174. Only one certification of non-Party imports had been transmitted to date to the Secretariat by a Party pursuant to paragraph 2 (b) of Article 3. Parties exporting POPs to non-Parties need to provide more information, including the submission of a certification pursuant to paragraph 2 (b) of Article 3.

*Recommendation: There is a need to encourage non-Parties in their efforts to ratify the Convention and/or the amendments to Annexes A, B and C, in particular those producing newly listed POPs. Parties exporting to non-Parties should be reminded of the obligation to obtain an annual certification from the non-Parties and to transmit such certifications to the secretariat.*

### **3. Governance**

#### **(a) Main findings**

175. Since its entry into force, the Convention has triggered changes in countries’ attitudes and general practices toward environmentally sound management of hazardous chemicals, in particular POPs. Institutional settings built under the Convention have the potential to impact other chemicals in a way that countries are using chemicals, not just POPs, in a better informed environment and with more precaution. Decreasing trends in POPs concentrations measured in countries which adopted measures preceding the adoption of the Convention are proving that those regulatory actions have the desired impact.

176. As a general note, the procedures and requirements set out by the Convention evolve over time through the various decisions adopted by the Conference of the Parties, for instance through decisions

<sup>21</sup> Ibid.

<sup>22</sup> The non-Party States, which were reported as destination countries with regard to export of persistent organic pollutants for permitted uses, were the United States of America and Malaysia in relation to PFOS, its salts and PFOSF.

<sup>23</sup> The non-Party States, which were reported as countries of origin with regard to import of persistent organic pollutants for permitted uses, were the United States of America, Israel and Italy. The chemicals subject to most recent imports were PFOS, its salts and PFOSF and endosulfan.

<sup>24</sup> UNEP/POPS/COP.7/10.

adopted to amend the annexes to the Convention to list new chemicals or to update any necessary procedures taking into account the periodic review and evaluation conducted by the Conference of the Parties.

177. The synergies arrangements have been put in place in order to improve governance and implementation of the Basel, Rotterdam and Stockholm conventions. Although this process is not directly linked to the Stockholm Convention obligations, implementation of the synergies process has the potential to influence the effectiveness of the Convention.

178. The synergies process aims to strengthen implementation of the Basel, Rotterdam and Stockholm conventions at the national, regional and global levels, promoting coherent policy guidance, enhancing efficiency in the provision of support to Parties with a view to reducing their administrative burden and maximizing the effective and efficient use of resources at all levels.

179. Expert processes to develop and/or update guidance to support Parties in meeting the obligations under the Convention have been put in place through extensive expert consultations and involvement of Parties and other stakeholders. The Convention has established mechanisms and processes, through the various expert groups, to continue to develop and/or update guidance to address new developments under the Convention, such as listing of new substances in Annexes A, B and/or C, and support Parties in implementing new obligations. All mechanisms and institutions required under the treaty have been put in place to date except for procedures and mechanisms on compliance pursuant to Article 17.

180. This report has identified a number of areas where Parties' implementation of the Convention is significantly lacking and regular follow-up is needed in order to improve the situation which are: ongoing monitoring of elimination of PCB; accuracy of exemption registrations; development and updating of national implementing legislation; update of the NIPs including Article 5 action plans; and review of national reports and reporting rates. The only subsidiary body established pursuant to the Convention, the POPs Review Committee, addresses a range of specific technical issues, although other expert groups and processes are established as needed. Currently there is no body mandated to address implementation issues of a technical and policy nature.

181. The example of the Basel Convention open-ended working group (OEWG), which reviews progress on many issues destined for a Conference of the Parties and provides guidance to a wide range of intersessional activities involving Parties, observers and the Secretariat, could be an option for an approach to increase consensus at the meetings of the Conference of the Parties and improve the implementation of the Convention between the meetings. The OEWG format works by tackling the issues in a reduced intersessional body that is similar to the Conference of the Parties, including consideration of both policy and technical issues towards the further development and implementation of the Convention. In addition to the OEWG, the Implementation and Compliance Committee is entrusted to review general issues of implementation (and compliance) identified by the Conference. This includes monitoring of implementation, identification of implementation difficulties as well as the development of guidance or recommendations to the Conference on how to improve implementation. Other similar models, such as subsidiary bodies on implementation used under the United Nations Framework Convention on Climate Change and the Convention on Biodiversity are also possibilities, whereas intersessional work under the Stockholm Convention is restricted to technical listing issues.

**(b) Conclusions and recommendations**

182. Increasing synergies in the implementation of the Basel, Rotterdam and Stockholm conventions has the potential to strengthen effectiveness of the Stockholm Convention.

*Recommendation: The recommendations from the review of the synergies arrangements as approved at the eighth meeting of the Conference of the Parties should be factored in, as relevant, into future effectiveness evaluations.*

183. Although the information base for this evaluation has been limited, it does appear that the Convention provides an appropriate and adequate framework for addressing the production, use, releases, import, export, and disposal of POPs. However, inadequate implementation is the key issue that has been identified in this evaluation and no subsidiary body exists to monitor or improve implementation.

*Recommendation: Implementation of the Convention needs to be closely monitored and improved during the intersessional period between meetings of the Conference of the Parties.*



#### 4. POPs in products

##### (a) Main findings

184. A major cross-cutting issue is that of POPs in products, which adds uncertainty as to the movement of chemicals across borders. There is a need to know more about products, their movements and associated releases. PFOS and HBCD have been listed in Annex A to the Stockholm Convention, including reference to labelling as an obligation that assists with the issue of identifying chemicals in products. Also related, draft guidance on labelling and guidance on monitoring and screening the newly listed POPs in products has been developed under the Stockholm Convention. While the guidance on monitoring and screening of the newly listed POPs in products and draft guidance on labelling has been developed under the Convention, this is an issue that merits more focused attention. Useful collaboration on chemicals in products with other relevant international activities, such as the Strategic Approach to International Chemicals Management, is also ongoing.

##### (b) Conclusions and recommendations

185. For some chemicals, labelling has been included as an obligation to assist with the issue of products, and draft guidance has been developed on labelling and on monitoring and screening of POPs in products. However, uncertainty as to the movement of POPs contained in products that cross borders remains high. Useful collaboration on chemicals in products with other relevant international activities is ongoing.

***Recommendation:** There is a need for more information about POPs contained in products, their movements and associated releases, ideally during the information-gathering stages of the review process of the POPs Review Committee. The POPs Review Committee would then be better able to consider labelling when making recommendations for control measures. The draft guidance on labelling for the newly listed POPs should be completed. Collaboration on chemicals in products with other relevant international activities should be maintained as appropriate.*

#### 5. Alternatives

##### (a) Main findings

186. The work on safe alternatives to listed POPs is important particularly in view of the need for improving the quality of risk assessment of alternatives. Challenges have been identified with the alternatives in use as flame retardants. Concentrations of old flame retardants such as organophosphates used as alternatives to BDEs or HBCD are increasing in the environment. They are not technical mixtures like BDEs, which could be monitored as a group, but rather individual chemicals that need to be dealt with individually, adding burden to the associated risk assessment costs.

187. The Convention is intended to address alternatives initially through the socio-economic considerations pursuant to Annex F regarding a chemical nominated for listing. After listing, further work on alternatives may be conducted such as with the example of the work programme on BDEs and PFOS. By listing substances and identifying alternatives for assessment and screening against Annex D, many industries would consider getting out of the production of chemicals that later would be proposed for listing, in particular noting the high costs for research and development. Nevertheless, the issue of using chemicals already available on the market as alternatives to BDEs and HBCD remains important, as they can be produced at a fraction of the cost.

188. A stronger call for work on alternatives could be made, such as through Article 11, to stimulate further research and information sharing through relevant channels such as the clearing-house mechanism or through the regional and global organization groups under the global monitoring plan. Ultimately, the success of the Convention in the future could be seen through the provisions of paragraph 3 of Article 3, as there would be no longer the need for listing new substances as they would be no longer produced. The consideration of alternatives should also take into account the current status of substances listed under other conventions and international agreements which consider POPs, green-house gases, ozone depleting substances, endocrine disrupting substances, etc.

##### (b) Conclusions and recommendations

189. The Convention addresses alternatives through the considerations pursuant to Annex F. Additional work on safe chemical and non-chemical alternatives for specific chemicals which are listed in the Convention or being considered for listing may be conducted such as with the example of the work programme on BDEs and PFOS. By listing substances and identifying alternatives for assessment and screening against Annex D, many industries would consider getting out of the

production of chemicals that later would be proposed for listing, in particular due to the high costs for research and development.

***Recommendation:** A stronger call for work on alternatives could be made through Article 11 to stimulate further research and information sharing through relevant channels such as the clearing-house mechanism or through the regional and global organization groups under the global monitoring plan, with the ultimate goal of eliminating the need for listing new substances as they would be then no longer produced.*

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