



**Stockholm Convention  
on Persistent Organic  
Pollutants**

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

**Addendum**

**Executive summary of the report on the second effectiveness evaluation**

**Note by the Secretariat**

As referred to in document UNEP/POPS/COP.11/19, the annex to the present note sets out the executive summary of the report on the second effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants prepared by the effectiveness evaluation committee. The report on the second effectiveness evaluation in full is set out in document UNEP/POPS/COP.11/INF/36. The present note, including its annex, has not been formally edited.

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\* UNEP/POPS/COP.11/1.

## Annex

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

## Executive Summary

### I. Overall outcomes of the effectiveness evaluation

1. The second effectiveness evaluation (EE-2) assesses, 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 persistent organic pollutants (POPs) and identifies ways to improve the effectiveness of the Convention. The report highlights the progress made since the first evaluation (EE-1), reviews the implementation of the recommendations made in the first effectiveness evaluation report and makes recommendations to further strengthen the effectiveness of the Convention.
2. 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. This report notes progress that has occurred since the first evaluation but highlights that there continues to be ongoing issues that hinder the full implementation of the Convention.
3. 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. As for the first evaluation, a major challenge to the evaluation continues to be the limited data available from national reports and national implementation plans (NIPs), and recommendations have been made to address those and other implementation issues.
4. Monitoring results indicate that regulations targeting POPs have succeeded in reducing levels of POPs in humans and the environment. For the initial POPs, concentrations measured in air and in human populations have declined and continue to decline or remain at low levels due to restrictions on POPs, some of which 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.
5. The priority areas for action to address implementation challenges identified in the second effectiveness evaluation include the following:
  - (a) *Strengthening legal, administrative and other measures to control POPs*, such as the development or revision of national legislation and/or regulations on POPs and their waste, including products and articles containing or contaminated with POPs; strengthening requirements for the use of best available techniques and best environmental practices (BAT/BEP) for the priority sources of unintentional POPs; the implementation of integrated vector control to stop the reliance on DDT<sup>2</sup> and scaling up the use of alternatives to DDT; and the elimination of, and implementation of environmentally sound management (ESM) of polychlorinated biphenyls (PCB);
  - (b) *Addressing compliance*, by establishing compliance procedures and mechanisms to begin the generation of compliance information to serve the next effectiveness evaluation and provide the implementation and compliance services that will benefit Parties and the Convention;
  - (c) *Strengthening information collection*, including sustained support for the global monitoring plan (GMP) for POPs; improving the user-friendliness of the electronic reporting system for national reporting and improving the timeliness and quality of national reports; improving the compilation of

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<sup>1</sup> The executive summary is reproduced as set out in the second report on the second effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants contained in UNEP/POPS/COP.11/INF/36, which has not been formally edited.

<sup>2</sup> 1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane (DDT).

national inventories of the production, use and releases of POPs that can contribute to a global inventory; and the timely updating of NIPs;

(d) *Strengthening environmentally sound management of POPs waste*, by taking appropriate measures to manage stockpiles and wastes, particularly obsolete pesticides, in an environmentally sound manner and to ensure that products and articles consisting of, containing or contaminated with POPs go to appropriate end-of-life disposal and do not enter recycling streams;

(e) *Strengthening awareness-raising and information exchange*, through, for example, engagement with populations most at risk to the exposure of POPs, including women, children, indigenous communities and workers to raise their awareness; making use of and strengthening the clearing-house mechanism to support national awareness-raising efforts and increase collaboration at national and international levels; the sharing of information among Parties and observers as well as other expert groups of the work and data available under the GMP for POPs; the sharing of experience and guidance in implementing measures to manage recycled plastics and wastes that may contain POPs; strengthening science-policy-industry interactions to enhance science-based decision-making; raising awareness among Parties of the obligations of the Convention with respect to newly listed POPs and on the procedures to register specific exemptions and acceptable purposes and other notification requirements; and the sharing of information on POPs-related activities from the Global Environment Facility (GEF) and its implementing agencies as well as on funding provided by donors to assist Parties;

(f) *Strengthening the provision of technical assistance*, through additional support to Parties, developing country Parties and Parties with economies in transition, in particular on: the further development and implementation of the GMP for POPs; the strengthening of legal and institutional frameworks; national reporting; the strengthening of national or regional capacities for the elimination or irreversible transformation of PCB; the identification and collection of information on POPs listed under the Stockholm Convention and their alternatives; unintentionally produced POPs; the environmentally sound management of POPs waste and stockpiles; the development, review and updating of NIPs; the identification and measurement of POPs in products; and taking science-based action in the implementation of the Basel, Rotterdam and Stockholm (BRS) conventions;

(g) *Strengthening the provision of financial assistance*, by making the necessary efforts to mobilize the resources required to support the implementation of the Convention, including: the development and strengthening of national legislation and/or regulations; the GMP for POPs; national reporting; the strengthening of human and infrastructure capacities for PCB elimination; the management and elimination of obsolete pesticides in an environmentally sound manner; the use of BAT/BEP; the identification and assessment of sites contaminated by POPs; the identification and collection of information on POPs listed under the Stockholm Convention and their alternatives; the development, review and updating of NIPs;

(h) *Improving effectiveness evaluation*, by providing the additional information necessary for conducting effectiveness evaluation identified in this evaluation; consider undertaking additional actions pursuant to Article 19, paragraph 5(d) of the Convention, including for example by establishing an ad hoc group to address issues relating to the implementation of the Convention; establishing a mechanism to compile and track the status of implementation of recommendations from both the first and second effectiveness evaluations; by streamlining the work of the effectiveness evaluation committee, to the extent possible, to align it with various reporting deadlines within the work of the Convention; and by amending the framework for effectiveness evaluation taking into account the report on the second effectiveness evaluation.

## **II. Background**

### **A. Objectives and mandate**

6. The objective of the Stockholm Convention, which was adopted on 22 May 2001 and entered into force on 17 May 2004, is to protect human health and the environment from POPs. The Convention requires Parties to adopt and implement measures aimed at reducing and/or eliminating the releases 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. However, it is expected that in combination,

they will reduce and/or eliminate overall releases with consequent benefits for human health and the environment across the globe. As of 1 November 2022, there are 186 Parties to the Convention.<sup>3</sup>

7. 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.

8. 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 aggregated level, an improvement in the situation prevailing before the Convention entered into force.

9. At its sixth meeting, in its decision SC-6/22, the Conference of the Parties adopted the framework for effectiveness evaluation of the Stockholm Convention pursuant to Article 16, including terms of reference for the effectiveness evaluation committee.<sup>4</sup> At its eighth meeting, in its decision SC-8/18, the Conference of the Parties, among other things, welcomed the first report on the effectiveness evaluation of the Convention prepared in accordance with the framework adopted at the sixth meeting,<sup>5</sup> including the conclusions and recommendations of the effectiveness evaluation committee.<sup>6</sup>

10. At its ninth meeting, in its decision SC-9/17, the Conference of the Parties adopted the revised framework for effectiveness evaluation,<sup>7</sup> and at its tenth meeting, in its decision SC-10/1, the Conference of the Parties elected 10 members to serve on the effectiveness evaluation committee until the closure of the eleventh meeting of the Conference of the Parties. In accordance with paragraphs 2 and 3 of the same decision,<sup>8</sup> the global coordination group of the GMP selected one member from among its members and the Secretariat selected two internationally recognized experts to serve on the effectiveness evaluation committee. A list of members of the effectiveness evaluation committee is set out in appendix 5 to the report on the second effectiveness evaluation of the Stockholm Convention (UNEP/POPS/COP.11/INF/36).

11. The purpose of the effectiveness evaluation is to assess whether the Convention has succeeded in achieving its objective of protecting human health and the environment from POPs; to determine the effectiveness of the specific measures taken to implement the Convention in achieving this objective; and to identify ways to improve the effectiveness of the Convention. This report highlights the progress made since EE-1 that took place in 2017 and reviews the implementation of the recommendations made in the first effectiveness evaluation report.<sup>9</sup> The report presents the findings of the second effectiveness evaluation (EE-2) that covers the period from 2016 to 2021 and presents recommendations of the effectiveness evaluation committee based on that evaluation.

## **B. Methodology**

12. The EE-2 report was developed by the effectiveness evaluation committee, in line with the revised framework for effectiveness evaluation adopted by the ninth meeting of the Conference of the Parties.<sup>10</sup> The evaluation conforms to the standards for evaluation in the United Nations system.

13. 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 GMP; national reports (first, second,

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<sup>3</sup> In this report, measures taken by 185 Parties as of 1 May 2022 have been evaluated.

<sup>4</sup> Decision SC-6/22.

<sup>5</sup> UNEP/POPS/COP.8/INF/40.

<sup>6</sup> UNEP/POPS/COP.8/22/Add.1.

<sup>7</sup> UNEP/POPS/COP.9/20/Add.1.

<sup>8</sup> Paragraph 2 of decision SC-10/1 also invited the Compliance Committee to select one expert among its members, should the Conference of the Parties at its tenth meeting adopt the procedures and mechanisms for determining non-compliance required under Article 17 of the Convention. Such procedures were not adopted at the tenth meeting.

<sup>9</sup> UNEP/POPS/COP.8/INF/40.

<sup>10</sup> UNEP/POPS/COP.9/20/Add.1.

third and fourth reports)<sup>11</sup> and other information on measures taken to implement the provisions of the Convention pursuant to Article 15; and 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.

14. The Secretariat collected and compiled the available scientific, environmental, technical and economic information and any relevant additional sources, prepared a preliminary analysis and submitted it to the effectiveness evaluation committee by 31 January 2022.

15. The status quo as of the date on which the Convention or its amendments entered into force for most Parties was used as the baseline to evaluate its effectiveness at the global level. The global monitoring reports set a baseline for information on levels of POPs in humans and the environment. The information generated during EE-1 provided the baseline for the second evaluation, except for the more recently listed POPs not included in the previous cycle, for which the EE-2 (UNEP/POPS/COP.11/INF/36) sets a baseline. The EE-1 made 48 recommendations and progress thereon has been described in the relevant sections of the EE-2 report and summarized in its appendix 2.

16. Temporal and spatial changes in levels of POPs in the environment are good indicators of whether the objective of the Convention is being achieved. To evaluate the extent to which observed changes can be attributed to the measures undertaken under the Convention, however, the evaluation framework takes into account the following assumptions:

(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;

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

17. National reports are one of the main sources of data for the evaluation as provided in paragraph 3 of Article 16. The very low submission rate of national reports by Parties has seriously hampered the ability of the committee to undertake this evaluation. 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. If all Parties move towards full compliance, and there remain significant levels of listed POPs in the environment, then this could suggest that the current Convention controls do not sufficiently address the problem of POPs.

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

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

18. 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.

19. There are sufficient data to determine trends for many of the listed POPs but not for all. In general, concentrations are declining and are starting to level off where regulatory action was taken decades ago. It is noted, however, that in some cases, such as hexachlorobenzene (HCB), there are slight increases, likely due to releases from secondary sources and the effects of climate change. There are insufficient data to detect trends for many of the newly listed POPs.

20. The patterns for chemicals listed from 2009 onwards are complex and variable across chemicals, media and geographic areas. For example, certain chemicals showed mostly declining or no change in trends, while others showed increasing trends followed by decreasing trends, or consistently decreasing trends depending on the location. Analysis linking to localized actions could assist in understanding such variability.

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<sup>11</sup> Reports for the fifth cycle were due on 31 August 2022. As of that date, 53 Parties had submitted their reports. Data from the fifth cycle (appendix 4 of document UNEP/POPS/COP.11/INF/36) were not included in the assessment.

21. It is important that data and samples be maintained in a coordinated and sustainable way, such as through environmental specimen banks, and that monitoring programmes operate efficiently and collaboratively to address challenges, in particular in the geographic areas with limited data.
22. Concentrations of most of the initial POPs in air 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 into Convention control measures. Primary emissions are believed to be the main driver for POPs levels in air. For some chemicals such as PCB, pesticides, polybromodiphenyl ethers (PBDEs), perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA) and their precursors, emissions continue from product usage, obsolete stockpiles, and waste disposal/dismantling/recycling practices, while open burning of wastes and biomass continue to release unintentionally produced POPs to the atmosphere. Declines in environmental background concentrations are likely to be slower when listed POPs have exemptions to allow continued use or presence in recycled materials.
23. Strengthened waste management practices, elimination of POPs waste (obsolete stockpiles of POPs listed in Annexes A and B including products and articles), identification and remediation of contaminated sites, and public education are needed to further reduce the emission of POPs, in particularly newly listed POPs, present in stockpiles and waste streams and unintentionally released via open burning.
24. The levels of many POPs, even those that have been regulated and managed, remain of concern. Existing monitoring programmes, as well as ad hoc monitoring programmes such as those for water, need to continue in order to determine trends. Large scale repeated monitoring programmes and sharing of metadata would allow comparison and enhance the ability to assess long-range environmental transport of POPs.
25. Coordination with other programmes such as ad hoc surveillance work on indoor air and urban and industrial emissions, monitoring and research programmes aiming to understand current exposure levels and emissions to the broader environment including urban areas and waste sectors, as well as development of environmental fate and exposure models would enable more comprehensive understanding of exposure and effectiveness of actions to protect human health and the environment. Opportunities also exist to link with climate science and biodiversity to better understand and interpret the monitoring data in a broader context.
26. Exposure to POPs mixtures and their transformation products which have POP-like characteristics contribute to increased toxicity burden to human health and the environment. These new developments have implications beyond the scope of the GMP but are important for understanding hazards and risks associated with POPs, which may inform the regulation of chemicals and the effectiveness evaluation of the Convention.
27. The ability of the Convention to determine on-the-ground effectiveness of actions to reduce the global burden of POPs critically relies on continuation of international and national monitoring programmes.
28. The third report of the GMP for POPs, including the recommendations by the global coordination group of the GMP, can be found in documents UNEP/POPS/COP.11/20/Add.1 and UNEP/POPS/COP.11/INF/38.

**Recommendations (Article 1):**

The Conference of the Parties should support long-term sustainable implementation and further development of the GMP for POPs, including providing financial and technical assistance, in order to address newly listed POPs and to overcome limitations and challenges to further develop information on existing trends and to assess trends for chemicals for which data are currently insufficient.

The Conference of the Parties should request the Secretariat to inform Parties and observers as well as other expert groups under the Stockholm Convention, such as the POPs Review Committee, the experts on the Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional Persistent Organic Pollutants and on BAT/BEP, the DDT expert group and the small intersessional working group on PCB, of the work and data available under the GMP for POPs, and encourage them to use the information in order to support their work towards protecting human health and the environment from POPs.

## **B. Assessing measures to reduce or eliminate releases from intentional production and use (Article 3)**

29. The outcomes addressed in assessing the effectiveness of Article 3 in helping to achieve the Convention objective are as follows:

- (a) Have the production, use, import and export of the chemicals listed in Annex A been eliminated?
- (b) Have the production, use, import and export of the chemicals listed in Annex B been restricted?
- (c) Have the production and use of new pesticides or new industrial chemicals that have the characteristics of POPs been prevented?

### **1. Overall**

30. Data available indicate that Parties continue to adopt measures to control POPs and to assess new and existing pesticides and industrial chemicals for POP-like characteristics. Listing a chemical in one of the annexes to the Convention is expected to result in Parties taking such action. For the initial 10 POPs, 62–72%<sup>12</sup> of Parties indicate having implemented measures to control the production, use, import and export. For the 10 POPs listed in 2009 and 2011, between 61 and 90 Parties (33–49% of 185 Parties) responded that they have implemented such measures, an increase compared to the 2017 evaluation, where 40–62 responding Parties (21–34% of 180 Parties) indicated taking such measures. For the POPs listed more recently, the rate of adoption of measures lags even further behind. This could in part be due to the need for more time to implement measures or the lack of capacity to assess Parties' national situations and identify alternatives.

31. Given the substantial number of Parties that have yet to adopt legal and administrative measures to control POPs, especially the newly listed POPs, it is important for Parties to give priority attention to developing or revising their national legislation and/or regulations that are appropriate for both industrial chemicals and pesticides to specifically implement obligations under the Stockholm Convention.

32. Of the 106 Parties that reported in the third and/or fourth national reports, 62 (58%) indicated that they did have one or more regulatory and assessment schemes for new pesticides or new industrial chemicals. Nine (8%) indicated they had a regulation or scheme to assess chemicals or pesticides in use, but it did not take into consideration the criteria in paragraph 1 of Annex D to the Convention. Eighteen (17%) indicated they did not have such a scheme and 16 (15%) were in process of developing one.

33. There continues to be a lack of information on the quantities of POPs produced, imported, exported and disposed of, making it difficult to assess trends over time. While available data suggest that once acceptable purposes and specific exemptions are no longer in effect, production of listed POPs ceases, better reporting by Parties would improve the database upon which to draw such conclusions. There continue to be large uncertainties in the quantities of obsolete stocks of POPs that need to be handled, and trade in obsolete pesticides, including POP pesticides, continues to be reported.

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<sup>12</sup> The percentage varies depending on the chemicals.

**Recommendations (Article 3, overall)**

The Conference of the Parties should urge Parties, if they have not yet done so, to take regulatory measures for the implementation of the Stockholm Convention.

The Conference of the Parties should request the Secretariat to engage with Parties to obtain more information on their regulatory measures.

The Conference of the Parties should encourage Parties to compile national inventories in order to provide a mechanism for developing a quantitative global inventory of production and stocks of POPs, including in articles, as well as unintentional releases of POPs, which can be done as part of the development and updating of NIPs.

The Conference of the Parties should invite Parties to provide validated information on production, import and export of POPs, including quantitative information, in the national reports pursuant to Article 15.

The Conference of the Parties should encourage Parties to support regional and global POPs modelling initiatives and make inventory data, including POPs in articles, available to regional organisation groups of the GMP.

The Conference of the Parties should urge Parties to adopt measures to mainstream awareness among customs officers of the need to control the imports and exports of POPs and to raise awareness among users of the risks of, and safe handling practices for, pesticides and industrial chemicals that are POPs.

The Conference of the Parties should urge Parties, industry and other stakeholders to provide available information on uses of candidate POPs and their alternatives to the POPs Review Committee so that it can be compiled and shared with Parties through the Stockholm Convention information exchange and reporting mechanisms in order to accelerate the replacement of POPs and reduce their ongoing use.

The Conference of the Parties should request the Secretariat to continue to undertake activities to raise awareness, including before the entry into force of an amendment, of the obligations of the Convention with respect to newly listed POPs, provide guidance and assistance for Parties to effectively implement control measures when they are listed, and to support Parties to strengthen science-policy-industry interactions to enhance science-based decision-making in the implementation of the Stockholm Convention.

The Conference of the Parties should invite regional centres and others in a position to do so to continue to provide, and prioritize, capacity-building on legal and institutional frameworks in line with Article 12.

**2. DDT**

34. The first DDT expert group assessment in 2004 did not present precise data for production of DDT. In 2007, the DDT expert group estimated total global production of DDT for vector control in 2005 at 6,269 tonnes of active ingredient (a.i.). This decreased to 1,071 tonnes a.i. in 2020, representing an 83% decline. Only a few countries still use DDT for disease vector control. In 2007, the expert group estimated the total global use of DDT at 5,000 tonnes a.i. This decreased to 1,032 tonnes a.i. in 2020, representing a 79% decline. India, which has been the largest DDT user by far, and the only remaining DDT producer, has made commendable progress in malaria control and in phasing out the use of DDT. Meanwhile, the use of DDT in the remaining DDT-using countries in southern Africa on aggregate has been relatively stable since 2012. Entomological expertise on vector surveillance and insecticide resistance management will be critical to guide evidence-based decisions away from the reliance on DDT.

35. Data available suggest that, despite the significant global estimates of obsolete stocks, there has been little progress in the environmentally sound disposal of DDT since the entry into force of the Convention, particularly since the first cycle of the evaluation.

36. While progress is being made in phasing-out the remaining use of DDT, additional capacity-building is needed to improve entomological surveillance, evidence-based decision-making and fine-tuned targeting of vector control interventions in Parties that are still using DDT. Integrated vector management



which will lead to substantial benefits for the global environment should be encouraged. Parties should develop, or update, and implement national plans for insecticide resistance management, including methods to react to detected levels of resistance plus methods to preserve insecticide susceptibility in vector populations.

37. The report of the DDT expert group on the production and use of DDT for disease vector control and on the intersessional process of consultations on a possible phase-out plan, including the recommendations by the DDT expert group, can be found in document UNEP/POPS/COP.11/INF/8.

**Recommendations (Article 3, DDT):**

The Conference of the Parties should invite Parties and others with the capacity to do so to provide technical and financial assistance to Parties, including through agencies such as the GEF, and the Global Fund to Fight AIDS, Tuberculosis and Malaria, with due priority accorded to:

(a) Reporting by Parties on DDT, including production, use, import, export and stockpiles and their disposal, and on the use of safer alternatives for indoor residual spraying;

(b) Ensuring adequate national capacity for long-term sustainable vector surveillance and for research, resistance monitoring and implementation of pilot testing and the scaling up of existing alternatives to DDT;

(c) Sound disposal of obsolete DDT stockpiles, in particular where stockpiles pose immediate risks to human health and the environment.

The Conference of the Parties should invite Parties to explore approaches that speed up the environmentally sound disposal of obsolete stocks such as working with regional centres to establish a local waste management industry for environmentally sound disposal of DDT and other pesticides within a geographic region or subregion.

### 3. PCB

38. The small intersessional working group (SIWG) on PCB established through decisions adopted by the Conference of the Parties (COP) has been instrumental to the preparation of the report on progress in elimination of PCB.

39. According to the report by the SIWG on PCB, there is insufficient and inconsistent information on quantities of PCB disposed of, still in use, or in storage to be able to assess progress in eliminating PCB. Data available, though limited, show that there continues to be a large stock of PCB and PCB-containing equipment that needs to be managed in an environmentally sound manner, especially in developing country Parties and Parties with economies in transition. It is therefore essential for PCB inventories to be undertaken in a systematic manner, in accordance with the inventory guidance (UNEP/POPS/COP.11/INF/11), and to cover all types of equipment, sectors and geographical areas. Meeting the 2025 and 2028 obligations relating to the elimination and ESM of PCB has shown to be a bigger challenge than anticipated.

40. The conclusions from EE-1 still stand: “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 ESM of PCB by 2028 has been severely underestimated at least in part due to poor reporting.”

41. The report on progress towards elimination of PCB, including the recommendations of the SIWG on PCB, can be found in document UNEP/POPS/COP.11/INF/12.

**Recommendations (Article 3, PCB):**

The Conference of Parties should urge Parties that have not done so to immediately implement legal and administrative measures to meet the 2025/2028 obligations of the Stockholm Convention and to urgently define rigorous plans for the environmentally sound management of PCB throughout its life

cycle, including its elimination and destruction, and to take into account the optimal and most cost-effective solutions given the specific background and circumstances of each individual country.

The Conference of the Parties should encourage Parties to strengthen their national or regional capacities for the elimination or irreversible transformation of PCB.

The Conference of the Parties should request the Secretariat to provide technical assistance for developing country Parties and Parties with economies in transition to strengthen national or regional capacities for the elimination or irreversible transformation of PCB.

The Conference of the Parties should encourage each Party to 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, and the Conference of the Parties should continue mandating the SIWG on PCB to provide support to this process.

The Conference of the Parties and the Secretariat should highlight to the GEF the need for its projects to be designed to strengthen human and infrastructure capacities for PCB elimination and destruction which will last beyond the duration of the project, and to support the development of sustainable infrastructure, processes and techniques that can be used for the transportation, storage and destruction of other hazardous wastes, particularly POPs waste, including PCB.

#### 4. Polybrominated diphenyl ethers (PBDEs)

42. It is likely that production and use of hexa- and hepta-bromodiphenyl ether (BDE) and tetra- and pentaBDE (BDEs listed under the Convention in 2009) have been reduced to very low levels. Several Parties are registered for specific exemptions for the use of those BDEs, which are available until 2030. The legacy of such production and use remains in the waste stream with substantial quantities of articles and waste possibly containing BDEs present in developing countries. About 75% of all the world production of PBDEs was c-decaBDE. However, the overall scale of current decaBDE production is unknown, as data on production, trade and stockpiles are only available for some countries.

43. For most Parties, the amendment listing decaBDE to the Convention entered into force on 18 December 2018. As of 20 April 2020, several Parties have registered specific exemptions for production and/or use and two Parties have provided notifications of articles in use that contain decaBDE. Limited information was received from the call for information on the extent of current use of decaBDE. Even though the production and use of decaBDE appears to be decreasing due to the listing, products containing this chemical are continuously entering waste streams (e.g., e-waste, end-of-life vehicles, construction and demolition waste). As in the case of BDEs listed in 2009, there has been some documentation of recycled plastics used in the production of consumer products that has been contaminated with decaBDE. The management of recycled plastics and wastes that contain decaBDE was identified as a challenge by Parties and is likely to continue as long as decaBDE is produced.

44. The report on the review of information related to specific exemptions for decaBDE, including recommendations of the POPs Review Committee, and the Secretariat's report on the evaluation and review of BDEs, can be found in documents UNEP/POPS/POPRC.18/INF/15 and UNEP/POPS/COP.10/INF/15, respectively.

#### **Recommendations (Article 3, PBDEs):**

The Conference of the Parties should highlight the need for Parties to give priority to implementing and/or strengthening measures for the ESM of wastes as required in Article 6, including products and articles upon becoming wastes, that contain or are contaminated with BDEs. This could include the development and dissemination of guidance and low-cost, practical methods to monitor products and wastes, and the systematic collection and reporting of data on presence of POPs in articles and wastes. Such data could be made available to the regional organization groups of the GMP for POPs and included in NIP updates.

The Conference of the Parties should encourage Parties to share their experience in implementing management measures for recycled plastics and wastes that contain BDEs, including those that can be implemented in a cost-effective way in developing countries, and to contribute to capacity-building efforts in that regard.

The Conference of the Parties should forward the findings of the evaluation and review of BDEs (UNEP/POPS/COP.10/INF/15) and the report on the review of information related to specific exemptions for decaBDE (UNEP/POPS/POPRC.18/INF/15) to the Executive Director of the UNEP and to the intergovernmental negotiating committee established pursuant to UNEA resolution 5/14 to develop an international legally binding instrument on plastic pollution, including in the marine environment.

## 5. Perfluorooctane sulfonic acid (PFOS)

45. Providing a global overview of the production and use of PFOS, its salts and perfluorooctane sulfonyl fluoride (PFOSF) continues to be challenging. Current estimates are quite uncertain and there continue to be large gaps in the data collected and reported by Parties. While there are limited data available, information suggests that there has been significant drop in the production (likely to have ceased in 2020) and use of PFOS, its salts and PFOSF and that alternatives are now widely used. This suggests that the listing of PFOS, its salts, and PFOSF has encouraged the use of alternatives and reduced the need for their continued use. However, there could still be considerable stocks of PFOS, its salts and PFOSF or waste containing these chemicals which have yet to be disposed of in an environmentally sound manner.

46. In 2009, PFOS, its salts, and PFOSF were listed in Annex B to the Convention with eight acceptable purposes and 12 specific exemptions. In 2019, the Conference of the Parties amended Annex B to limit production and use to one acceptable purpose and two specific exemptions, which entered into force for most Parties on 3 December 2020. As of 31 January 2022, one Party had submitted a notification to the register of the acceptable purpose, and two for the specific exemptions.

47. Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds were listed in Annex A to the Convention in 2019. At its tenth meeting, the Conference of the Parties listed PFHxS, its salts and related compounds in Annex A to the Convention with no specific exemptions. Like PFOS, its salts and PFOSF, those chemicals also belong to a group of substances called per- and polyfluoroalkyl substances (PFAS) and have similar industrial applications as PFOS. Monitoring data showed an increase in the concentrations of PFOA, perfluorohexane sulfonic acid (PFHxS) and their related compounds in environmental media, possibly due to their use as alternatives to PFOS.

48. The report on the assessment of alternatives to PFOS, its salts and PFOSF, including the recommendations of the POPs Review Committee, and the Secretariat's report on the evaluation of PFOS, its salts and PFOSF, can be found in documents UNEP/POPS/POPRC.18/INF/19/Rev.1 and UNEP/POPS/COP.11/INF/15, respectively.

### **Recommendation (Article 3, PFOS):**

The Conference of the Parties should request the Secretariat to provide technical assistance for developing country Parties and Parties with economies in transition to identify and collect information on PFAS listed under the Stockholm Convention, strengthen the legislation and/or regulations to manage those chemicals throughout their lifecycles, and to identify and introduce safer, effective and affordable alternatives.

## 6. Lindane and endosulfan

49. Safer and effective alternatives to lindane and endosulfan are commonly available and many Parties have successfully put in place regulatory measures to end the use of those pesticides. The specific exemptions for production (endosulfan) and use (lindane and endosulfan) are no longer in effect, which means that the Convention prohibits all production and use of those two POPs. This suggests that Parties have now been able to switch to alternatives and cease their production and use. Environmental monitoring data show a declining trend in the levels of endosulfan in many regions. The levels of lindane were also declining in both humans and the environment. However, significant quantities of stocks of obsolete lindane and endosulfan were reported in some countries.

**Recommendation (Article 3, Lindane and endosulfan):**

The Conference of Parties should invite Parties, on a priority basis, to mobilize the necessary funds and implement measures to manage and eliminate obsolete pesticides, in particular lindane and endosulfan, in an environmentally sound manner.

**C. Assessing measures to reduce or eliminate releases from unintentional production (Article 5)**

50. 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.

51. A majority of Parties (71%) have developed their national action plans further to the entry into force of the Convention, a slightly higher proportion than reported in the previous evaluation (62%). However, only 29% have reviewed and updated their national action plans for more newly listed Annex C POPs. This is an improvement over the findings of the previous evaluation when 20% of Parties had indicated they had done so. Currently fewer than one third of the Parties are requiring BAT/BEP to control their releases of unintentional POPs from priority sources, essentially unchanged from the previous evaluation. Nearly half of the Parties that reported have evaluated the efficacy of the laws and policies relating to the management of releases.

52. 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.

53. There continue to be gaps in information on trends in releases of unintentional POPs at the global level due to both the low rate of submission of national reports and the lack of regular updates of inventories.

54. The recommendations of the BAT/BEP experts can be found in documents UNEP/POPS/COP.11/8 and UNEP/POPS/COP.11/INF/16.

**Recommendations (Article 5):**

The Conference of the Parties should urge Parties to develop and maintain their action plans up to date to minimize and ultimately eliminate releases of unintentionally produced POPs, which should be implemented as part of the national implementation plans, and to strengthen requirements for the use of BAT/BEP for the priority sources identified as required in Article 5.

The Conference of the Parties should request the Secretariat to continue to support Parties on the updating and implementation of action plans under Article 5, in particular for those Parties that have never submitted one.

The Conference of the Parties should urge Parties to update their inventories regularly, as required in Article 5, using the Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs and other available guidance, and, as required by Article 15, to provide this information as part of their national reports to confirm the success of the measures they have taken to implement Article 5.

The Conference of the Parties should invite regional centres and others in a position to do so to continue to provide, and prioritize, capacity-building on unintentionally produced POPs

**D. Assessing measures to reduce or eliminate releases from stockpiles and wastes (Article 6)**

55. 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.

56. There continue to be large data gaps on the amount of generation and ESM of POPs waste. However, data available indicate that large stocks of POPs and POPs waste exist, including articles in use

that contain POPs, that need to be managed in an environmentally sound manner. The ESM of waste consisting of, containing or contaminated with POPs, is a challenge and it is likely that the quantities of these types of waste will increase in the coming years as more chemicals are listed under the Convention as POPs and articles in use with POPs content enter waste streams. The identification and remediation of contaminated sites also pose significant challenges. This points to the need for Parties to give greater emphasis to addressing the end phase of the life cycle of POPs, including methods and tools for ESM.

57. Such emphasis is also needed during the risk management evaluation to take into account the waste-phase of a chemical when it is added to Annex A or B to the Convention, and to promote sustainable development. This may require strengthening the capacity of the POPs Review Committee in this aspect of the chemical life cycle. The presence of POPs in articles (e.g., PBDEs and listed PFAS) can prevent their recycling and pose a risk of contamination of the recycled materials. They can end up in organic waste streams such as biosolids and composts and affect their use as fertilisers or soil amendments.

58. The committee noted that illegal trade in POPs, mercury, pesticides and hazardous and other wastes (particularly e-waste) continue to exacerbate both environmental and human health risks, often in developing countries with limited infrastructure to combat it.<sup>13</sup>

#### **Recommendations (Article 6):**

The Conference of the Parties should urge Parties to increase their efforts to compile and maintain inventories of POP stockpiles and wastes, as provided in Article 6, and report on these data through the reporting mechanisms of both the Stockholm and Basel conventions as appropriate. Data collection mechanisms for determining how much of specific POPs wastes exist and have been destroyed or otherwise appropriately disposed of over time need to be enhanced. This could be achieved by working more closely with the Basel Convention so that it gives more specific focus to the work on POPs waste inventories, through the Basel Convention's POPs waste technical guidelines and national reports.

The Conference of the Parties should encourage Parties to enact and enforce national legislation and/or regulations on the development of inventories of stockpiles and waste and their management in an environmentally sound manner in accordance with Article 6.

The Conference of the Parties should continue to request the POPs Review Committee and invite the SIWG on the technical guidelines on the environmentally sound management of POPs waste under the Basel Convention to cooperate closely and exchange information and expertise when undertaking the work assigned to them.

The Conference of the Parties should invite waste experts to take part in the deliberations related to waste and disposal implications in Annex F risk management evaluation by the POPs Review Committee (see also related Article 8 recommendation).

The Conference of the Parties should remind Parties and observers (industry and other stakeholders) and relevant experts under the Basel Convention to submit information on wastes and disposal of articles containing POPs to the POPs Review Committee for consideration during the Annex F risk management evaluation, to better inform decisions regarding separation, sorting and recycling of wastes, as well as the necessary technological considerations regarding disposal, including destruction, requirements.

The Conference of the Parties should request the Secretariat to continue to develop guidance and tools to assist Parties in the implementation of the Convention in particular Article 6 and invite Parties and others to use available guidance and tools.

The Conference of the Parties should invite regional centres and others in a position to do so to continue to provide, and prioritize, capacity-building on the environmentally sound management of POPs waste.

<sup>13</sup> Interlinkages between the chemicals and waste multilateral environmental agreements and biodiversity: key insights, UNEP (2021), Conclusion 14.

The Conference of the Parties should invite Parties and others, including researchers, to share information with others on waste management in line with Articles 9 and 11, and in cooperation with regional centres where applicable.

The Conference of the Parties should urge Parties to strengthen waste management practices, elimination of POPs waste (obsolete stockpiles of POPs listed in Annexes A and B including products and articles), identification and remediation of contaminated sites, and public education to further reduce the emission of POPs, in particular newly listed POPs, present in stockpiles and waste streams and unintentionally released via open burning.

## E. Specific exemptions and notification of use (Article 4)

59. 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.

60. Parties must register for specific exemptions at the time they become a Party to the Convention and/or its amendments, if such a need is identified. The number of Parties registered for specific exemptions for the newly listed POPs is lower than expected and no extensions of registrations of specific exemptions have been requested to date. The reasons for this are not known, but it could relate to a lack of information at the national level to determine whether an exemption is needed. In all likelihood, more Parties should be registering for exemptions than actually do so. Failure to register for an exemption for a listed chemical that is nonetheless being produced and/or used by a Party has the potential to constitute a large gap in the Convention's information base. This may also lead to gaps in addressing POPs at the national level, the implementation of the Convention and in the assessment of its effectiveness. Parties would benefit from assessing their national situation immediately after a chemical is proposed for listing and being more engaged in the POPs Review Committee's evaluation.

61. Awareness raising and technical assistance activities could be helpful, such as those organized by the Secretariat, including immediately after receiving the proposal of a chemical for listing and later after adoption of an amendment by the COP, in order to encourage Parties to engage in the work of the POPs Review Committee and to provide sufficient information on their national situation and availability of alternatives, and also to remind relevant 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 register an exemption.

62. Such activities could include an explanation of why the registration of exemptions is important for the overall effectiveness of the Convention's controls, and to track the impact on other Parties' ability to enforce their laws on controls of listed chemicals and implement their obligations under the Convention, noting that specific exemptions should be implemented in accordance with Article 3 paragraph 6.<sup>14</sup> Without registered exemptions or acceptable purposes for listed chemicals, other Parties are prohibited from exporting to or importing from such Parties.

### **Recommendation (Article 4):**

The Conference of the Parties should request the Secretariat to undertake further awareness raising activities to improve the understanding of Parties on the procedures to register specific exemptions and acceptable purposes and notify other exemptions, and to provide information on alternatives to the listed POPs as well as the implications of failure to register for exemptions.

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

63. The outcome to be addressed in assessing the effectiveness of Article 8 is whether new chemicals have been listed in the annexes to the Convention as recommended by the POPs Review Committee.

<sup>14</sup> Article 3, paragraph 6: Any Party that has a specific exemption in accordance with Annex A or a specific exemption or an acceptable purpose in accordance with Annex B shall take appropriate measures to ensure that any production or use under such exemption or purpose is carried out in a manner that prevents or minimizes human exposure and release into the environment. For exempted uses or acceptable purposes that involve intentional release into the environment under conditions of normal use, such release shall be to the minimum extent necessary, taking into account any applicable standards and guidelines.

64. The POPs Review Committee continues to review candidate POPs according to the procedures outlined in the Convention and to make recommendations to the Conference of the Parties regarding the listing of new chemicals in the Annexes to the Convention on a regular basis. With the addition of 18 new chemicals to the list of initial POPs globally banned or restricted under the Convention at the time it entered into force (100% of those nominated), the operation of the process for listing new POPs in Annexes A, B and/or C can be considered successful. However, there have been cases that an alternative to a listed chemical has subsequently been identified as a POP. Similarly, transformation products from the decay of primarily released POPs have been documented in the environment and merit more monitoring and analysis and should be addressed in future effectiveness evaluations. Further, the number of Parties actively engaged in the process for reviewing proposed chemicals continues to be small. The reason why engagement continues to be low is not clear, although the work around science-to-action is aimed at increasing capacity in this regard.

**Recommendations (Article 8):**

The Conference of the Parties should encourage Parties, industry and other observers to provide information to the Secretariat on chemicals under review by the POPs Review Committee in a timely manner to: (i) help with national level assessments of the presence of the chemical and whether exemptions are needed, (ii) inform Annex F considerations on waste and disposal implications including separation, sorting and recycling, (iii) support the development of sound supporting documents and recommendations to the Conference of the Parties on the listing of new POPs, and should also request the Secretariat to remind all Parties of this as soon as a chemical is proposed for listing.

The Conference of the Parties should encourage Parties and observers to make use of the risk profiles, risk management evaluation and other POPs Review Committee documents which are readily available on the Convention's website.

The Conference of the Parties should invite waste experts to take part in the deliberation related to waste management in Annex F risk management evaluation by the POPs Review Committee (see also related Article 6 recommendation).

**G. Information exchange (Article 9)**

65. 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 persistent organic pollutant-related issues, and whether that information has helped them to meet their obligations under the Convention.

66. The number of Parties that report establishing an information exchange mechanism continues to increase. As of 31 January 2022, 103 (55%) of Parties had reported having such a mechanism, up from 45 in EE-1.

67. The volume of information exchanged by Parties has increased appreciably compared to the previous cycle (+34%). Although the volume of information exchanged by intergovernmental and non-governmental organizations remains low, the number of intergovernmental and non-governmental organizations that have submitted information through the clearing-house mechanism has increased substantially by 95% and 150%, respectively. Finally, the number of visitors on the Stockholm Convention's website, which is the main vehicle for disseminating clearing-house mechanism information, has increased by 44% compared to the previous evaluation cycle.

68. As of 31 January 2022, 178 of 185 Parties of Parties (97%) had designated a national focal point and/or an official contact point for the Convention, which is an improvement over 2016 when 139 out of the 180 Parties to the Convention (77%) had done so.



**Recommendations (Article 9):**

The Conference of the Parties should request the Secretariat to raise awareness about the clearing-house mechanism and remind all Parties, including those that have not designated official contact points and national focal points for information exchange, to designate such contact points, or update information on existing contact points, as soon as possible.

The Conference of the Parties should encourage Parties and other stakeholders to make use of the clearing-house mechanism for information exchange including in the various review processes, including the GMP, under the Convention.

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

69. The outcomes to be addressed in assessing the effectiveness of Article 10 are the extent to which stakeholders enjoy access to information on the effects of POPs and their sound management and alternatives and whether public awareness of POPs issues has improved.

70. The Convention has triggered action by Parties on public information, awareness and education. The number of Parties indicating they have taken action to implement Article 10 has increased from 59% in EE-1 to 68% in this evaluation. This is encouraging; however, there continue to be gaps that need to be addressed, in particular around the development and implementation of educational and public awareness programmes on POPs for women, children, indigenous communities, occupationally-exposed populations and vulnerable communities, and education and training programmes including for workers, scientists, educators and technical and managerial personnel, at the national and international levels.

71. The current indicators and information collected in the national reports are insufficient to assess the effectiveness of the measures undertaken under Article 10 and could be improved.

**Recommendations (Article 10):**

The Conference of the Parties should encourage Parties of the importance of reaching out and engaging with populations most at risk to the exposure of POPs, including women, children, indigenous communities, occupationally exposed populations and vulnerable communities.

The Conference of the Parties should request the Secretariat under the clearing-house mechanism to explore ways to support national awareness raising efforts through the sharing of resources from the GEF, UNEP, and other organizations and to develop new material to fill any gaps identified, including the gaps identified in the above recommendation.

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

72. 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, candidate POPs and alternatives, and whether those activities have assisted Parties to better fulfil their obligations under the Convention.

73. Fewer than half of Parties indicated that they are involved in research and development activities, virtually unchanged from the last evaluation. Only about one-third of Parties indicated that they are involved in the monitoring of POPs. The importance of research, monitoring, modelling, risk evaluation and data-sharing for the successful implementation of the Convention must not be underestimated. Activities related to the implementation of other Articles of the Convention (e.g., Article 1, Article 5, Article 8, Article 12) contribute to building capacity especially in developing country Parties and Parties with economies in transition. Activities conducted within the framework of the GMP have increased capacity for monitoring, modelling, and data sharing. It is recognised that research, monitoring, modelling, risk evaluation and data sharing need to be sustained in the long-term, and even enhanced in developing country Parties. Capacity-building activities to strengthen national scientific and technical research capabilities in developing country Parties, including at the regional level, to advance national and regional capacities will need to be sustained, which requires the mobilisation of sufficient resources.

74. Assessing success of the implementation of this Article is a challenge and the data currently available through national reporting are insufficient as qualitative information is not sought. Other sources



of data or approaches, such as revised indicators, are likely needed to effectively evaluate implementation of Article 11.

**Recommendations (Article 11):**

The Conference of the Parties should remind Parties of their commitment to support research, monitoring, modelling, risk evaluation and data sharing in the long term, including the GMP and the work related to the POPs Review Committee in reviewing chemicals proposed for listing. This will require mobilizing the necessary funds to enhance capacity in Parties, and at the regional level.

The Conference of the Parties should consider strengthening the clearing-house mechanism to increase collaboration with universities, scientific organisations, research institutions and others and should encourage sharing of information on POPs among various actors at the national and international levels who are involved in research and development, environmental monitoring, risk assessment and other aspects relevant to the implementation of the Convention.

**J. Technical assistance (Article 12)**

75. The outcomes to be addressed in assessing the effectiveness of Articles 12 are:

(a) Whether timely and appropriate technical assistance has been made available to developing country Parties and Parties with economies in transition to enhance their capacity to implement the Convention;

(b) Whether the regional centres are providing technical assistance and promoting the transfer of technology to developing country Parties and Parties with economies in transition relating to the implementation of the Convention.

76. National reports provide insufficient data on the quantity and type of technical assistance to draw any firm conclusions about whether the process indicators have been met. However, there appears to be an increase in the amount of assistance being provided and received. Information provided by the Secretariat suggests that the number of technical assistance activities have increased since EE-1. The information available suggests a slight increase in the number of Parties submitting their initial NIPs and increased quality of information in the national reports as a result of relevant technical assistance activities, including those implemented by the regional centres. There continues to be a need to improve mechanisms to collect data on the level of technical assistance provided and its impact on the implementation of the Convention, including through national reporting.

77. Technical assistance and technology transfer activities needs to be further strengthened, including through regional delivery and effective and efficient cooperation with the regional centres. The initial efforts of the clearing-house mechanism to create 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 needs to be further enhanced.

78. The technical assistance needs identified in the needs assessment and highlighted throughout this report included the following three priority areas: (i) legal and institutional frameworks; (ii) unintentionally produced POPs and (iii) stockpiles and wastes. Further areas for technical assistance should take into account the priority areas found in the overall outcomes of the effectiveness evaluation.

**Recommendations (Article 12):**

The Conference of the Parties should request the Secretariat to further strengthen its cooperation with the GEF and its implementing agencies for obtaining information from them on their POPs activities.

The Conference of the Parties should request the Secretariat and invite Parties and other organizations in a position to do so to provide technical assistance in the following three priority areas identified in the needs assessment: (i) legal and institutional frameworks; (ii) unintentionally

produced POPs and (iii) stockpiles and wastes, as well as the priority areas found in the overall outcomes of the effectiveness evaluation such as national reporting.

## **K. Financial resources and mechanisms (Articles 13 and 14)**

79. The outcomes to be addressed in assessing the effectiveness of Articles 13 and 14 are:

(a) Whether countries have undertaken to provide, within their capabilities, financial support and incentives in respect of those national activities that are intended to achieve the objectives of the Convention in accordance with national plans, priorities and programmes, pursuant to paragraph 1 of Article 13 of the Convention;

(b) Whether countries provided financial resources to enable developing country Parties and Parties with economies in transition to fulfil their obligations under the Convention, in accordance with paragraphs 2 and 3 of Article 13 of the Convention;

(c) Whether countries provided financial resources in accordance with its capabilities and in accordance with its national plans, priorities and programmes, to assist developing country Parties and Parties with economies in transition in their implementation of the Convention through other bilateral, regional and multilateral sources or channels, in accordance with paragraph 3 of Article 13 of the Convention.

80. The funding for the implementation of the Stockholm Convention other than GEF resources is not systematically being reported and can only be estimated in a very general way. With respect to national activities intended to achieve the objective of the Convention in accordance with national plans, priorities and programmes pursuant to paragraph 1 of Article 13 of the Convention, 58 Parties reported providing financial support and incentives, with 49 providing quantitative information. In some cases, Parties reported their contribution to the GEF, the Special Trust Fund and/or the programme of work. Of the 107 Parties that provided their third and/or fourth national reports, 11 Parties indicated they had provided financial assistance through official development assistance (ODA) and bilateral, regional and multilateral organisations. Forty-eight (48) Parties in Africa, Asia and the Pacific, Eastern Europe and Latin American and Caribbean were identified as recipient Parties.

81. The financial mechanism of the Convention, including the GEF and other donors have made efforts to provide additional sustainable financial resources to continue to support and enhance the implementation of the Convention in developing country Parties and Parties with economies in transition over the long term. The COP, however, took note of a projected funding gap with regard to PCB. Given the 2025 and 2028 deadlines under the Convention, it urged and requested the GEF to explore all feasible options available to provide enhanced support to achieve these goals with regard to PCB. The fifth review of the financial mechanism concluded that country priorities are adequately reflected in projects funded by the GEF, and that governments are generally adequately involved in the project development and design process. Recipient countries have been encouraged to utilize the direct access pathway as a means of increasing their ownership over enabling activities, such as NIP updates. The funding for multifocal projects has considerably increased compared to the previous review period and a clear trend towards more integrated approaches has been noted. In addition, projects funded by the GEF also resulted in co-benefits for terrestrial protected areas, marine protected areas, restoration of degraded agricultural land, improved landscape practices, avoidance of marine litter and mitigation of greenhouse gas emissions.

**Recommendations (Articles 13 and 14):**

The Conference of the Parties should request 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, to provide additional sustainable financial resources to continue to support and enhance the implementation of the Convention over the long-term by developing country Parties and Parties with economies in transition.

The Conference of the Parties should invite the entities entrusted with the financial mechanism and other donors to continue to consider in their programming the following priority areas, as highlighted throughout this report:

- (a) The development and/or strengthening of national legislation and/or regulations to specifically implement obligations regarding POPs listed under the Convention;
- (b) 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;
- (c) The elimination of the use of PCB in equipment by 2025;
- (d) Reporting by Parties on DDT, ensuring adequate national capacity for long-term sustainable vector surveillance and for research, resistance monitoring and implementation of pilot testing and the scaling up of existing alternatives to DDT, and the sound disposal of obsolete DDT stockpiles;
- (e) Environmentally sound management and disposal of waste containing or consisting of persistent organic pollutants, including obsolete stockpiles, products and articles;
- (f) The introduction and use of BAT/BEP to minimize and ultimately eliminate releases of unintentionally produced POPs;
- (g) The review and updating of NIPs, including as appropriate their initial development;
- (h) The long-term implementation and further development of the activities related to the GMP, and capacity-building to sustain the new monitoring initiatives that provide data and information for the global monitoring report;
- (i) The research, development and deployment of products, methods and strategies as alternatives to POPs;
- (j) Training on national reporting;
- (k) Identification and assessment of sites contaminated by POPs.

The Conference of the Parties should urge Parties to provide information on the amount of financial assistance provided and received as part of their national reports transmitted under Article 15, and invite other donors, including the UNEP Special Programme, to provide information on funding provided to assist Parties.

**L. Implementation plans (Article 7)**

82. 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.

83. Parties continue to transmit their NIPs. However, except for the initial 12 POPs, where 95% of Parties have submitted their NIPs, only 58% have transmitted their NIPs for the 2009 amendments, and 54% for the 2011 amendments. For the more recently listed POPs, the transmission rate is even lower. Very few Parties submit their NIPs on time. Parties that rely on GEF funding for the development and updating of their NIPs are more likely to submit after the deadline and with a longer delay especially for the earlier NIPs. NIPs are an essential tool for the ESM of POPs. The delay in NIP development could impact the implementation of measures to control POPs, as NIPs are often the initial step in identifying action that needs to be taken. Activities undertaken as part of NIP development also support the implementation of Articles 9, 10 and 11.

84. Development of NIPs requires that, first, the necessary institutional and legal infrastructure is in place that outlines the authority and responsibilities for the work; second, the necessary technical know-how needs to be available, including relevant guidance and tools. A regional approach, such as through regional centres, has shown to be a promising approach to increase capacity-building and provide support to Parties. To ensure that NIP updates remain a manageable process, Parties may benefit from clearer guidance. Parties need to ensure that POPs activities are integrated into broader national goals and priorities, including climate change, biodiversity, and the sustainable development goals since this will help mobilise the needed support. Given the need for regular updates to NIPs, and the time it takes to develop NIP projects and secure funding, the GEF and donors should allow for the needed flexibility to anticipate future listings when evaluating proposals.

85. The committee recognized the progress made in the development of the electronic templates, tools and guidance to support the development, review and updating of the NIPs in a harmonized manner with the reporting under Article 15 of the Convention.

**Recommendations (Article 7):**

The Conference of the Parties should urge Parties and organizations in a position to do so, including the GEF, to continue to provide financial and technical support to developing country Parties and Parties with economies in transition for the development, review and updating of NIPs as a priority, using a regional approach such as through regional centres, as appropriate.

The Conference of the Parties should urge Parties to enhance their efforts to submit their updated NIPs in a timely manner and request the Secretariat to continue to support these efforts.

**M. Reporting (Article 15)**

86. 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.

87. The number of national reports received is still far too low. While 29% of Parties submitted their fifth reports on time (31 August 2022) only about half of Parties have submitted their national reports in the third and fourth reporting cycles, with only 16% and 18% of Parties submitting their reports on time (data as of 31 August 2021). Many Parties continue to have difficulties in providing complete national reports and Parties also provide data that is erroneous or inconsistent, highlighting the need for improved quality control.

88. Not only is reporting under Article 15 key to have the information on the successful implementation of the Convention and for effectiveness evaluation, but it also provides Parties with the necessary information to assess progress they have made in the ESM of POPs, including their elimination. Parties need to give high priority to this work as part of the implementation of the Convention. The Secretariat has developed a strategy to assist Parties increase the rate of submission of national reports, and has provided training and feedback to Parties that have reported, in order to improve the quality of the submitted information. It will be possible to assess the impact of these interventions on the quality and timeliness of submissions only after the fifth reporting cycle is complete and a sufficient number of Parties have submitted their reports.

**Recommendations (Article 15):**

The Conference of the Parties should request the Secretariat, once the fifth reporting cycle is complete, to evaluate the effectiveness of its strategy to increase the rate of submission and completeness of national reports by Parties pursuant to Article 15, and, based on the results and feedback received and this report on the second effectiveness evaluation, to make modifications to the strategy as necessary and report to the twelfth meeting of the Conference of the Parties.

The Conference of the Parties should request the Secretariat to continue to provide support to Parties to facilitate their timely submission of national reports pursuant to Article 15 and other information such as on PCB, BDEs, DDT and PFOS, including by webinars, in collaboration with the regional centres, as well as relevant international agencies.

The Conference of Parties should invite the regional centres to continue to provide capacity-building on national reporting.

The Conference of the Parties should request the Secretariat to continue to improve the user-friendliness of the electronic reporting system to enhance information collection for the purposes of the effectiveness evaluation, taking into account feedback received from Parties.

The Conference of the Parties when establishing the deadline for the submission of national reports, should take into account the timeline of various evaluation processes under the Convention as appropriate and where possible.

## N. Non-compliance (Article 17)

89. The Conference of the Parties has yet to adopt procedures and mechanisms on compliance pursuant to Article 17, making this the only mechanism yet to be implemented under the Convention.

90. The Stockholm Convention is the only global regulatory multilateral environmental agreement (MEA) adopted in the last thirty years that does not have a compliance mechanism. The Stockholm Convention cannot be considered fully implemented at the international level without Article 17 procedures and mechanisms in place. The approval of compliance procedures and mechanisms is urgently needed for the Stockholm Convention in order to support the Conference of the Parties with its responsibilities to keep the implementation of the Convention under continuous review and evaluation, and to assess whether the Convention is effective in achieving the objective in Article 1. As in other MEAs, such a mechanism would provide the Conference of the Parties with a subsidiary body that would aim to secure the implementation of and compliance with the obligations under the Convention by examining systemic issues of non-compliance affecting many Parties and assisting individual Parties to address compliance challenges.

91. The absence of a compliance mechanism has reduced the information available to the effectiveness evaluation process and to the Conference of the Parties on the compliance of Parties with their obligations and will thus limit the scope and utility of the effectiveness evaluation.

92. Upon the establishment of procedures and mechanisms it may be necessary to consider and establish relevant indicators in cooperation with such a mechanism.

### Recommendations (Article 17):

The Conference of the Parties should urgently establish compliance procedures and mechanisms in order to begin the generation of compliance information to serve the next effectiveness evaluation and provide the implementation and compliance services that will benefit Parties and the Convention. Once the Conference of the Parties has approved procedures and institutional mechanisms on compliance under Article 17, a priority focus of the Committee's work programme should address the issue of improving reporting and full legislative implementation of the Convention for both industrial chemicals and pesticides.

## O. Effectiveness evaluation (Article 16)

93. 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.

94. Since the last evaluation, many activities undertaken to support the implementation of the Convention have addressed the recommendations made at that time. Progress on the implementation of those 48 recommendations has been included in the relevant sections of the EE-2 report (UNEP/POPS/COP.11/INF/36) and the status of their implementation is found in its appendix 2. Many challenges are long-term in nature and will require more than one evaluation cycle before they are fully addressed. Establishing a repository that compiles the implementation of recommendations would assist in the assessment of the extent of progress made.

95. The information available on the levels of POPs in the environment indicates that the levels of the first listed POPs are declining overall. While there is still insufficient data for the more recently listed POPs, where information is available, it also suggests that actions to reduce the production, use and release of POPs have resulted in reducing exposures. In addition, some Parties begin to take action at the stage

when a chemical is identified as a potential POP and others once it is listed. This supports the conclusion that the implementation of the Convention is contributing to achieving the objective of the Convention to protect human health and the environment from POPs. However, there are still some gaps and uncertainties, particularly in the lack of reporting and compliance data, which hinders the effectiveness evaluation of the Convention.

**Recommendations (Article 16):**

The Conference of the Parties should reaffirm the central role of the GMP in providing invaluable monitoring data, emphasize the criticality of up-to-date reporting including through Article 15 national reports, and note the importance of a compliance mechanism as ways to generate information to support effectiveness evaluation and identify ways to help Parties improve the implementation of the Convention.

The Conference of the Parties should further consider amending the framework for effectiveness evaluation taking into account the report on the second effectiveness evaluation, for example the indicators related to Articles 10, 11 and 17.

The Conference of the Parties should request the Secretariat to establish a mechanism to compile and track the status of implementation of recommendations from both the first and second effectiveness evaluations.

The Conference of the Parties should request the Secretariat to streamline the work of the effectiveness evaluation committee, to the extent possible, to align it with various reporting deadlines within the work of the Convention.

## P. General and cross-cutting issues

### 1. Parties and non-Parties

96. As of 1 November 2022, there are 186 Parties to the Convention<sup>15</sup>. With regards to the amendments adopted by the Conference of the Parties, it would appear that there has been an increase in the number of Parties consenting to be bound, ranging from 180 Parties for some of the 2009 amendments to 170 Parties for the 2019 amendments. All Parties that previously made notifications of non-acceptance have since withdrawn these notifications. Several “opt-in” Parties have deposited their instruments consenting to be bound by the amendments with the depositary, with 1 “opt-in” Party consenting to be bound by all the amendments to Annexes A, B and C to date.<sup>16</sup> In light of the significant increase in the number of Parties consenting to be bound by various amendments, it can be ascertained that this does include those that may have been major producers, users, exporters or emitters of persistent organic pollutants.

97. To date, the Secretariat has received only one certification of export to a non-Party state which was in 2017. The Secretariat has included components in its technical assistance activities to raise awareness and explain the process to consent to be bound, as well as the processes for trade control thereafter.

**Recommendations (General and cross-cutting issues, Parties and non-Parties):**

The Conference of the Parties should encourage non-Parties to ratify the Convention and/or the amendments to Annexes A, B and C, in particular those non-Parties producing newly listed POPs.

The Conference of the Parties should remind Parties exporting to non-Parties, as defined in paragraph 2 (d) of Article 3, of the obligation to obtain an annual certification from the non-Party and to transmit such certifications to the Secretariat.

<sup>15</sup> In this report, measures taken by 185 Parties as of 1 May 2022 have been evaluated.

<sup>16</sup> Amendments to Annex A, B or C to the Convention enter into force on the expiry of one year from the date of communication by the depositary of such amendments for all Parties except those that 1) have submitted a notification of non-acceptance of the amendment in accordance with Article 22 paragraph 3 (b) of the Convention (referred to as “opt-in” Parties); or 2) that have made a declaration with respect to those Annexes in accordance with Article 25 paragraph 4 (referred to as “opt-out” Parties), in which case any such amendment shall enter into force for such Party on the ninetieth day after the date of deposit with the depositary of its instrument of ratification, acceptance, approval or accession with respect to such amendment, in accordance with Article 22 paragraph 4 of the Convention. At the current time, there are 167 “opt-out” Parties and 18 “opt-in”.



## 2. Governance

98. EE-1 recommended that implementation of the Convention needs to be closely monitored and improved during the intersessional period between COPs. The Convention currently has no intersessional mechanism for monitoring implementation of the Convention between Conferences of the Parties and making recommendations to the Conference of the Parties with a view to improving implementation. Whereas the POPs Review Committee, the GMP and several other technical processes (e.g., DDT expert group) serve to guide the COP with respect to listings, no equivalent body exists for implementation issues, and no institution exists to assist Parties intersessionally with implementation challenges or to monitor progress.

99. Although compliance mechanisms in MEAs typically serve this function by providing compliance promotion services in relation to both individual Parties and systemically across all Parties, the Convention has worked without success for close to twenty years to adopt a compliance mechanism. For this reason, the committee recommends that in the interim, and should COP-11 not be in a position to approve said procedures and mechanisms, the COP should consider what steps would enable it to keep under continuous review and evaluation the implementation of this Convention, pursuant to paragraph 5 of Article 19, such as by establishing an intersessional body or an ad hoc group and by taking up information in that regard contained in this and other COP reports, for example on non-reporting and legislative implementation.

### **Recommendations (General and cross-cutting issues, Governance):**

The Conference of the Parties should request the Secretariat to prepare a report, based on information transmitted by Parties, on challenges with meeting obligations under the Convention, as identified in this and other COP reports, for example on non-reporting and legislative implementation, including recommendations for consideration by the Conference of the Parties on how to improve implementation of the Convention.

The Conference of the Parties, as part of the consideration on Article 16 effectiveness evaluations, should consider undertaking additional actions pursuant to Article 19, paragraph 5(d), including for example by establishing an ad hoc group to address issues relating to the implementation of the Convention, noting other recommendations in this report.

## 3. POPs in products:

100. The Stockholm Convention requires identification through labelling and other means for use of some of the POPs such as PCB, hexabromocyclododecane (HBCD) and pentachlorophenol (PCP). The identification of POPs in products and articles continues to be a challenge, especially for existing articles in use. When a chemical is considered for listing as a POP with specific exemptions or acceptable purposes, consideration could be given how to make the chemical easily identifiable by labelling or other means throughout its life cycle as well as how to measure the presence or concentrations of POPs in products. This would allow the presence of a POP in a product or article to be more easily known, enhance worker and consumer safety, and facilitate appropriate handling of the waste. However, it must be acknowledged that labelling is often not feasible, especially in articles that are already in use. Practical and affordable ways to identify the presence of POPs in articles are also needed and can assist in ensuring their ESM.

**Recommendations (General and cross-cutting issues, POPs in products):**

The Conference of the Parties should encourage Parties to use guidance available on POPs in products, such as guidance on inventories, BAT/BEP guidance, as well as any other information on POPs in products from all available databases on hazardous chemicals in products (such as the European Union's SCIP database for information on Substances of Concern In articles as such or in complex objects (Products)<sup>17</sup>).

The Conference of the Parties should highlight the need for Parties to give priority to implementing and/or strengthening measures for the environmentally sound management of wastes as required in Article 6, including products and articles upon becoming wastes, that contain or contaminated with POPs such as BDEs, to prevent these chemicals from being introduced into articles (see related Article 3 recommendation).

The Conference of the Parties should remind Parties and observers (industry and other stakeholders) and relevant experts under the Basel Convention to submit information on wastes and disposal of articles containing POPs to the POPs Review Committee for consideration during the Annex F risk management evaluation to better inform decisions regarding separation, sorting and recycling of wastes, as well as the necessary technological considerations regarding disposal, including destruction, requirements (see related Article 6 and 8 recommendations).

The Conference of the Parties should request the Secretariat and invite others in a position to do so to provide technical assistance to build capacity for the identification and measurement of POPs in products.

The Conference of the Parties should request the Secretariat to closely cooperate and coordinate with the Executive Director of the UNEP in the intergovernmental negotiation committee established pursuant to UNEA resolution 5/14 in relation to POPs in plastic products.

The Conference of the Parties should request the Secretariat and invite UNEP to support projects and develop documents on POPs in plastics where appropriate and to inform the global community and raise awareness on the POPs-related issues of plastics.

**4. Alternatives**

101. During the review process for candidate chemicals, the POPs Review Committee considers information on available alternatives received from Parties and observers through the call for information. This information is included in the risk management evaluation and made available on the Convention's website. Through formal requests for information, the Secretariat and the POPs Review Committee obtain information on alternatives which they collate and then make available to Parties on the Convention's website. The Conference of the Parties has also encouraged Parties to engage in research on alternatives to POPs that continue to be used by some Parties through provisions for acceptable purposes or specific exemptions. At times, alternatives have later been listed as POPs. Parties and industry should be encouraged to screen alternatives against criteria listed in Annex D prior to adopting them in support of paragraphs (3) and (4) of Article 3 of the Convention.

**Recommendation (General and cross-cutting issues, Alternatives):**

The Conference of the Parties should urge Parties and invite industry and organizations in a position to do so to fund as a priority research and development of potential alternatives to POPs including undertaking preliminary hazardous assessment, using available physical, chemical, toxicological and ecotoxicological properties or similar data, such as monitoring and integrated approaches for testing and assessment, as appropriate, to screen them against Annex D in support of paragraphs (3) and (4) of Article 3 of the Convention, and to provide this information to the POPs Review Committee to support consideration of paragraph (b) of Annex F to avoid regrettable substitutions.

<sup>17</sup> <https://echa.europa.eu/scip>.



## 5. Science to Action:

102. The “From Science to Action” initiative has yielded valuable insights into the challenges that need to be addressed to enhance science-based action to support implementation of the BRS conventions. Several lessons for designing a new science-policy panel can be gleaned from the years of experience of the BRS conventions. At its tenth meeting, the Conference of the Parties took note of the information on progress in the action by Parties and others to promote the implementation of the road map and encouraged Parties and others to continue to undertake action that promotes the implementation of the road map.

### **Recommendation (General and cross-cutting issues, Science to Action):**

The Conference of the Parties should request the Secretariat to continue to undertake capacity-building and training activities to support Parties in taking science-based action in the implementation of the BRS conventions and further cooperate and coordinate with UNEP and, as appropriate, other relevant organizations, scientific bodies and stakeholders to strengthen the science-policy interface at the national, regional and international levels.

The Conference of the Parties should encourage Parties to prioritize research projects related to POPs issues at national, regional and global level and ensure sustainable funding of these projects at the national level and share the outcomes of the research with appropriate bodies such as the POPs Review Committee and the groups under the GMP including through the clearing-house mechanism.