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Matters for consideration or action by the Conference of the Parties: effectiveness evaluation

Effectiveness evaluation**

Note by the Secretariat

- 1. Article 16 of the Stockholm Convention requires the Conference of the Parties to evaluate the effectiveness of the Convention commencing four years after its date of entry into force and regularly thereafter. The evaluation is to be based on available scientific, environmental, technical and economic information, including monitoring reports on the levels of persistent organic pollutants in the environment.
- 2. At its second meeting, the Conference of the Parties adopted decision SC-2/13 on effectiveness evaluation, in which it, among other things:
 - (a) Agreed to complete the first effectiveness evaluation at its fourth meeting, in 2009;
- (b) Decided to implement the elements for a global monitoring plan as proposed in the annex to the decision;
- (c) Requested the Secretariat to compile the elements for the first effectiveness evaluation, including the global monitoring report, national reports and non-compliance information from any procedure that might be put in place by the Conference of the Parties, and to submit a report to the Conference of the Parties at its fourth meeting for consideration;
- (d) Decided to review at its fourth meeting the arrangements, including the global monitoring plan, used for providing the Conference of the Parties with the information for effectiveness evaluation as implemented for the first report and to decide on future arrangements, including the intervals of subsequent effectiveness evaluations.

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^{*} UNEP/POPS/COP.4/1.

^{**} Mandate for the action described in the present note contained in: Stockholm Convention, Article 16; report of the Conference of the Parties of the work of its first meeting (UNEP/POPS/COP.1/31), annex I, decision SC-1/13; report of the Conference of the Parties on the work of its second meeting (UNEP/POPS/COP.2/30), annex I, decision SC-2/13.

- 3. At its third meeting, the Conference of the Parties adopted decision SC-3/19 on effectiveness evaluation by which, among other things, it adopted on a provisional basis the amended global monitoring plan for persistent organic pollutants ¹ and the amended implementation plan for the global monitoring plan for persistent organic pollutants for the first effectiveness evaluation. ²
- 4. The Conference of the Parties also adopted decision SC-3/18 on reporting by which it, among other things, invited Parties that had not yet done so to submit their national reports pursuant to Article 15 of the Convention no later than 31 July 2007 and requested the Secretariat to prepare a report pursuant to paragraph 2 (d) of Article 20 of the Convention by 30 July 2008 in time to be used in the effectiveness evaluation under Article 16 of the Convention;
- 5. In its decision SC-3/20 on non-compliance, the Conference of the Parties decided to negotiate further and to consider for adoption at its fourth meeting the procedures and institutional mechanisms on non-compliance required under Article 17 of the Convention.
- 6. Outcomes of the implementation of elements of decisions SC-2/13 and SC-3/19 related to the global monitoring plan are presented in document UNEP/POPS/COP.4/31. The global monitoring report is set out as document UNEP/POPS/COP.4/33 and the regional monitoring reports are set out in documents UNEP/POPS/COP.4/INF/19.
- 7. The report prepared by the Secretariat pursuant to paragraph 2 (d) of Article 20 and in response to decision SC-3/18 on reporting is provided in document UNEP/POPS/COP.4/29.
- 8. In response to paragraph 6 of decision SC-2/13 the Secretariat compiled the elements for the first effectiveness evaluation for consideration by the Conference of the Parties at its fourth meeting. The compilation is set out in the annex to the present note.
- 9. In response to paragraph 7 of the same decision the Secretariat prepared an analysis of the arrangements for providing the Conference of the Parties with the information for the first effectiveness evaluation and proposed possible arrangements to complete the first (baseline) evaluation and for future evaluations. The analysis is set forth as appendix III to the present note.

Possible action by the Conference of the Parties

- 10. The Conference of the Parties may wish:
 - (a) To take note of the compilation of elements for the first effectiveness evaluation;
- (b) To consider options for completing the first effectiveness evaluation and the possible arrangements for future effectiveness evaluations set out in paragraphs 7–9 of appendix III to the present note and possible adoption of such arrangements;
- (c) To consider and adopt with any amendments the proposed schedule for the effectiveness evaluation set out in table 1 of appendix III to the present note;
 - (d) To request the Secretariat:
 - To support the implementation of the effectiveness evaluation arrangements for future evaluations:
 - (ii) To revise the format for national reports to allow for the provision of consistent and comparable data to be used for effectiveness evaluations taking into account the recommendations for improvement contained in the annex to the present note.

¹ UNEP/POPS/COP.3/22/Rev.1, annex II.

² UNEP/POPS/COP.3/23/Rev.1.

Annex

Compilation of elements for the first effectiveness evaluation

I. Introduction

- 1. The objective of the Stockholm Convention is to protect human health and the environment from persistent organic pollutants (POPs). The Convention requires Parties to adopt and implement measures aiming at reducing or eliminating the release of POPs into the environment with the view to reducing the exposure of human, animals and environmental organisms thereto. The Parties will each elect to apply a number of policy measures that will contribute to the reduction or elimination of POPs releases. These measures will vary by country reflecting the differing situations and POPs problems. It is expected that the applied measures will reduce POPs releases overall with consequent benefits for health and the environment, but linking any single measure to a particular benefit will be difficult.
- 2. The purpose of the effectiveness evaluation required under Article 16 of the Convention is to assess whether the implementation of the Convention has succeeded in meeting its objective. The review will assist the Parties to determine whether the Convention's provisions are sufficient to meet its objective or whether they need to be modified or additional measures adopted, or whether additional activities or projects should be undertaken to complement or improve the Convention's implementation to meet the objective.
- 3. To evaluate the effectiveness of a programme or other activities, it is necessary to compare the situation before and after the action is taken. In this way it is possible to judge whether the aims of the programme or activities have been achieved successfully. The Convention's impact will be the result of individual measures undertaken by Parties. The evaluation therefore has to be able to assess whether the combination of measures provides, at the aggregate level, a timely improvement of the situation prevailing before the Convention entered into force.
- 4. Ideally, a review of the Convention's effectiveness would assess whether measures taken to implement the Convention have contributed to achieving the following outcomes:
- (a) Reduction in the amount of POPs that are intentionally manufactured, imported, exported and used with their eventual elimination;
- (b) Reduction in the amount of POPs that are unintentionally produced and released with their eventual elimination;
- (c) Reduction in the amount of POPs wastes and stockpiles, through their sound disposal and eventual elimination;
 - (d) Reduction in the levels of POPs in humans and the environment.
- 5. The present compilation outlines in chapter II the initial approach taken for the effectiveness evaluation. Chapter III lists various parameters that can be considered in evaluating the Convention's effectiveness and under each of these parameters it highlights potential indicators, summarizes the data that are currently available on these indicators, identifies gaps in and challenges to the data available and then makes suggestions to improve the collection of data so that they can better serve the evaluation. Chapter IV summarizes considerations for future evaluations and chapter V provides conclusions. Appendix I provides information on quantities of POPs extracted from the national implementation plans and appendix II a possible summary table that could be used in future evaluation reports. The compilation is concluded in appendix III with a proposed approach that the Conference of the Parties could take for subsequent effectiveness evaluations.

II. Approach taken for the first effectiveness evaluation

- 6. The Convention indicates in Article 16 that an effectiveness evaluation should be performed on the basis of available scientific, environmental, technical and economic information, including:
 - (a) Reports on monitoring of environmental levels;
 - (b) National reports submitted pursuant to Article 15;
 - (c) Non-compliance information provided pursuant to Article 17.

- 7. The present baseline evaluation report considered the global monitoring report (UNEP/POPS/COP.4/33), national reports submitted by Parties pursuant to Article 15 and national implementation plans pursuant to Article 7 to supplement the information from national reports as appropriate. Data on specific exemptions and notifications received for substances in Annex B were also used. As the compliance procedures for the Convention are yet to be finalized, no compliance information was available to include in the present review.
- 8. The global monitoring report compiled information on levels of POPs in humans and the environment that could serve as a baseline for future evaluations and made recommendations for the second phase of the global monitoring plan to serve future evaluations.
- 9. National reports provide information on measures taken by a Party, together with information on quantities of chemicals manufactured, imported, exported, held in stockpiles and released into the environment at the national level. Parties were requested to submit their national reports to the Secretariat by 31 July 2007. Data from 44 national reports received and accepted by the Secretariat by 31 December 2008 were collated and analysed for the present review.
- 10. The evaluation of the effectiveness of measures that are implemented to reduce the impacts of chemicals on environmental and health parameters is complex. In many cases proxy measures or indicators that are associated with the desired outcome are chosen. In this first evaluation indicators were identified for specific Articles of the Convention, including Article 1 (objective). These included outcome indicators that correspond to the aim and process indicators that reflect measures or actions taken. The summary of each parameter described in chapter III suggests indicators that could be used for conducting future evaluations.

III. Review of data available for effectiveness evaluation

11. An effectiveness evaluation normally considers data for indicators before and after a certain event and measures the change. The first evaluation is to provide a baseline for future evaluations. In doing so, it identifies potential indicators, presents the data available and assesses the ability to use them in future evaluations. The present compilation makes suggestions to improve the data available to complete the first and subsequent evaluations so that they are better able to assess the Convention's effectiveness.

A. Assessing measures to reduce or eliminate releases from intentional production and use

12. The aim of Article 3 is to reduce or eliminate production, use, import and export of the chemicals listed in Annex A and to restrict production and use of the chemicals listed in Annex B. It is expected that these measures would result in lower levels of POPs in the environment. Associations can be observed between the time and type of measures taken and the reduction in the levels of chemicals in the environment to assess whether the Convention has been effective in achieving its goal.

1. Indicators

- 13. Annex A and B to the Convention deal with chemicals produced and used intentionally. In each case, the long-term aim is the ultimate elimination of the use of the chemical and thus its manufacture and release into the environment.
- 14. The following are possible outcome indicators for each of the chemicals listed in Annexes A or B:
 - (a) Annual production of a chemical;
 - (b) Annual amount of chemical traded.
- 15. A possible process indicator is the number of Parties that have adopted measures that meet or exceed the Convention's requirements.

2. Information currently available

16. National reports currently include information on measures taken and quantities of a substance listed in Annexes A or B that is manufactured, used, imported or exported.

- 17. Of the 44 Parties reporting, 36 (82 per cent) indicated that they had adopted legal or administrative measures necessary to eliminate the production and use of chemicals listed in Annex A. The national reports received indicated that most countries had either never used or had banned POP pesticides. For POP pesticides other than DDT, 41 of the 44 Parties responding (93 per cent) indicated that they had banned or never registered them for use. Two parties said that mirex remained a registered active ingredient, one party reported that toxaphene remained an ingredient in some pesticide formulations and another reported the continued use of chlordane.
- 18. For DDT, 40 Parties (91 per cent) reported having restricted the production or use in accordance with the provisions of Annex B, with 32 (73 per cent) having banned all its uses. Two Parties noted that, while its use in public health was permitted, DDT was currently not being used as such. Two Parties indicated that DDT was still permitted to be used as an intermediate in closed systems.
- 19. Five Parties did not include information on the regulatory measures taken for polychlorinated biphenyls (PCBs). Of the Parties that did include such information, only one indicated that it had no measures in place for PCBs.
- 20. Of the 44 Parties reporting, nearly all had taken measures to halt the manufacture, use, import and export of the chemicals in Annexes A and B, as required by the Convention. One Party reported continued manufacture of some POPs (see table 1).

Table 1

Quantities of POPs manufactured as reported to the Secretariat (one Party)

	Quant	Quantity (kg)		
Chemical name	2004	2005		
Chlordane	363 000	327 000		
Mirex	15 000	6 000		
DDT	2 284	1 592		
Total	380 284	334 592		

- 21. Six Parties indicated they had exported and eight indicated they had imported POPs listed in Annexes A or B. Review of the reports suggests that most of these POPs were destined for environmentally sound disposal.
- 22. Only 21 Parties provided data on imports and exports in their national reports. While Article 16 does not refer specifically to national implementation plans as a source of data for the evaluation, the plans also contain information on POPs imports and exports. The 88 national implementation plans received by the Secretariat give a more complete set of data with which to work. Table 2 summarizes the total quantities of POPs as reported in national implementation plans received. These quantities can only provide an approximation of the magnitude of the POPs problem as they represent the data from 88 of 162 Parties. In addition, the data provided are for various years, have not always been compiled using the same approach and the accuracy of the estimates varies. Appendix I provides additional detail.

Table 2

Total quantities of POPs as reported in 88 national implementation plans received

Obsolete pesticides	14 666	tons
Other pesticide stockpiles	22 948	tons
PCB-contaminated oils	6 431 886	tons
	1 455 181	litres
PCB contaminated equipment	472 853	tons
DDT stockpiles for use	201	tons
DDT stockpiles as waste	104 584	tons

23. Of the 44 reports, 37 provided the optional part C of the national report that summarizes progress in eliminating PCBs from the following regions: Africa (4), Asia (6), Central and Eastern Europe (8), Latin America and the Caribbean (5) and Western Europe and Other States Group (14). Of these, 23 countries (62 per cent) said that they had developed a strategy for identifying stockpiles pursuant to Article 6, while 8 (22 per cent) had not; 27 (73 per cent) had developed a strategy for identifying products and articles in use and wastes consisting of, containing or contaminated with PCBs,

and 3 (8 per cent) indicated they had not. Most Parties reported that they had adopted measures for the sound management of PCB wastes (see table 3).

Table 3

Number of Parties reporting adoption of legislative or administrative measures

	Number of Parties
	$(Total\ reporting = 36)$
Environmentally sound handling of PCB waste	27 (75 %)
Environmentally sound collection of PCB waste	28 (78 %)
Environmentally sound transportation of PCB waste	28 (78 %)
Environmentally sound storage of PCB waste	28 (78 %)
Environmentally sound disposal of PCB waste	26 (72 %)
Safe efficient and environmentally sound management of PCB stockpiles	26 (72 %)

3. Challenges and gaps

- 24. Regional or global aggregations of quantities of chemicals produced, used, released or disposed of will only be meaningful when the number of Parties has stabilized and reports are compiled in a consistent way and available on time. Regional and global analysis of trends presented as an average of relative change over time can, however, provide some indication of overall progress.
- 25. While the current reporting format provides an overview of legal and administrative measures that have been adopted, it may be useful to have more specific information. For example, a Party may have taken measures that are more restrictive than the obligations under the Convention, which would influence releases of the substance in question and have an impact on the trends observed. While it is possible to discern from the reports that some Parties continue to permit the use of PCBs in existing equipment and that others have already stopped all uses, the reporting format does not require this specific level of detail and is not structured to ease compilation and comparisons. Knowing this level of detail will help in interpreting trends observed and assessing potential associations with measures taken.

4. Suggestions for improvement

26. The format for national reporting could be modified to ensure that the data provided are more specific and more consistent to allow for a more detailed analysis of measures taken and their relationship to observed trends. This would include providing national data about absolute quantities (for example, in tons) for a base year and subsequent years. This would then enable changes over time to be calculated and expressed in relative terms (for example, per cent change from the baseline situation).

B. Specific exemptions and notification of use

27. The Convention establishes a register of exemptions that lists those Parties that have registered for specific exemptions listed in Annexes A or B of the Convention. Where no Parties are registered for any specific exemptions for a chemical listed in Annexes A or B, this would indicate the production and use of the chemical is no longer necessary. The reduction in the number of Parties that have registered an exemption of a substance in Annexes A or B, and of chemicals for which exemptions continue to exist, would therefore provide an indication of progress. In the same way, the number of notifications received regarding the production or use of a chemical in Annex B would reflect the continuing use of this substance.

- 28. The number of registrations of exemptions can provide an indication of progress. If no Party requests an exemption, this would indicate that Parties have been able to find alternatives and the need for the use, and thus manufacture, of the chemical has been eliminated. Potential indicators for this parameter are:
 - (a) Number of Parties that have registered a specific exemption;
 - (b) Number of Parties that have notified the use of a chemical for an acceptable purpose;

(c) Number of chemicals for which specific exemptions remain in effect.

2. Information currently available

- 29. The Secretariat has received few requests for specific exemptions. No exemptions have been requested for aldrin, dieldrin, heptachlor and hexachlorobenzene. While one Party reported that toxaphene remained a registered active ingredient in pesticides (see paragraph 16), no request for specific exemptions has been received for this chemical. Four Parties have requested exemptions for chlordane, DDT and mirex. The exemptions for chlordane and mirex were for its production or use as a termicide, for DDT as an intermediate in the production of another pesticide, dicofol. These exemptions are scheduled to expire on 17 May 2009. Only one Party has requested an extension of its exemption for the use of DDT as an intermediate.
- 30. As of 31 December 2008, 15 Parties had notified the Secretariat of their intention to produce and or use DDT for disease vector control as allowed under Annex B. Table 4 shows the number of notifications received in each year.

Table 4
Number of DDT notifications received per year

	2004	2005	2006	2007	2008
Number of notifications received	3	3	5	3	1

C. Assessing measures to reduce or eliminate releases from unintentional production

31. The aim of Article 5 is to reduce releases derived from anthropogenic sources of each of the chemicals listed in Annex C with the goal of their continuing minimization and, where feasible, ultimate elimination. Parties compile an inventory of releases of unintentional POPs that provides an estimate of quantities of these chemicals that are produced and discharged into the environment. An association between the levels measured in the environment and estimates of releases of these chemicals would provide evidence of these measures' effectiveness. The degree to which best available techniques and best environmental practices are employed would provide an indication of the status of implementation of measures taken to reduce the releases of these POPs.

1. Indicators

- 32. Potential indicators for this parameter include:
 - (a) Number of countries with action plans under Article 5;
 - (b) Quantity of POPs that are unintentionally produced and released into the environment;
 - (c) Extent to which best available techniques and best environmental practices are adopted.

2. Information currently available

- 33. National reports include a section for reporting data on releases of POPs that are created unintentionally. Thirty-three Parties provided an estimate of releases of dioxins and furans in their national reports and seven a projection for future releases.
- 34. Six of the nine Parties that provided data for more than one year showed a decrease in total releases over time. In countries where an increase was reported, the reasons why were not explained. They include, however, data for additional source categories not previously included, a more accurate inventory and change in the level of economic activity. A more complete set of data was compiled from national implementation plans received (see appendix I). Even if incomplete, these data provide a more global estimate of releases.
- 35. Of the 44 Parties reporting, 30 (75 per cent) reported that they had developed an action plan under Article 5 to characterize and tackle unintentional POPs releases. The Convention indicates that

these action plans are to be reviewed every five years and the results incorporated into national reports. This will enable data to be collected to estimate trends.

3. Challenges and gaps

- 36. Given the small number of Parties that provided this information, and since Parties did not report releases in the same manner, did not use the same base year and were not always consistent in how their estimates were calculated, it is impossible to provide a useful estimate of overall quantity of releases or trends of these releases over time. In addition, the data must include notes that explain changes in the data collections methods or to other factors that might influence values to ensure that any year-to-year changes are interpreted correctly.
- 37. The national reports lack information on the specific measures adopted. It could be useful to have this information as part of the assessment of the effectiveness of the measure taken. The extent to which best available techniques and best available practices had been adopted in the country would need to be included if this factor is to be used as an indicator.

4. Suggestions for improvement

38. To allow for more accurate compilation and aid comparability of the data, information on unintentional POPs releases would need to be classified in a consistent manner, for example by using the source categories in the Standardized Toolkit for Identification and Quantification of Dioxin and Furan Releases. In addition, consistency in the methods for compiling the source inventories and release estimates needs to be maintained over time. This should not prevent any improvement in the estimates in the quantities reported, but does mean that changes in the scope of the inventory would need to be reflected in the data presented. For example, if a new category of sources were identified, better emission factors were to become available or better information on levels of activity data were obtained, this change should be applied also to previous years' estimates. This will create consistency in the entire time series between years and will reflect the real situation more accurately, rather than present an apparent interruption in the trend. Additional guidance and training would help to ensure that Parties compile their data in a systematic and comparable way.

D. Measures to reduce or eliminate releases from stockpiles and wastes

39. The Convention requires Parties to implement strategies to identify stockpiles and products and articles in use and wastes consisting of, containing or contaminated with POPs. They are also to adopt measures to manage stockpiles and wastes appropriately. In addition, Parties are encouraged to identify and remediate POPs-contaminated sites. The aim is to ensure that stockpiles (Annexes A and B) and wastes (Annexes A, B and C), are managed in a manner protective of human health and the environment.

1. Indicators

- 40. The expected outcome of these measures is the elimination of all stockpiles and the use of environmentally sound technologies to treat any waste. Possible indicators of progress include:
 - (a) Current quantities of stockpiles;
- (b) Number of Parties with measures in place to manage stockpiles and wastes in an environmentally sound manner.

2. Information currently available

41. Of the 42 national reports reviewed, 14 provided estimates of quantities of stockpiles and 8 an estimate of the quantities treated in an environmentally sound manner. In many cases, Parties reported total quantities of pesticide stockpiles rather than POP pesticides specifically, since such wastes usually include a range of substances and are not fully characterized. Table 5 compiles the quantities provided. Since various Parties provided information on stockpiles and on quantities treated, they do not correspond and cannot be compared.

Table 5
Quantities of stockpiles and POPs treated in an environmentally sound manner (data from 20 Parties)

	Stockpiles (kg)	Destroyed (kg)
DDT	19 583 994	65 000
PCBs	657 003	34 785 504
Pesticides (excluding DDT)	1 964 116	3128
Total	22 205 113	34 853 632

- 42. Forty-three Parties provided information on measures related to stockpiles and wastes:
- (a) Thirty-four (79 per cent) have developed strategies for identifying stockpiles consisting of or containing chemicals in Annexes A or B;
- (b) Thirty-four (79 per cent) have developed strategies for products and articles in use and wastes consisting of, containing or contaminated with a chemical listed in Annexes A, B or C;
 - (c) Thirty-three (77 per cent) have developed strategies to identify contaminated sites;
- (d) Twenty-nine (67 per cent) have adopted legislative or administrative measures to manage stockpiles containing chemicals listed in Annexes A or B;
 - (e) Thirty-six (84 per cent) have measures to manage wastes appropriately.

3. Challenges and gaps

43. While national reports encourage the reporting of the quantity of stockpiles and amounts of stockpiles destroyed, Parties did not always provide information in the same way. This means that it is currently impossible to use these data to review trends and assess the extent to which the Convention's objective has been attained.

4. Suggestions for improvement

44. Better guidance and a more structured format for reporting should allow for data on stockpiles, and measures taken to tackle stockpiles and wastes, to be collected in a more consistent and comparable way.

E. Levels in humans and the environment

- 45. Examining levels of POPs before and after a certain measure has taken effect provides important information to be used in assessing whether an action taken is likely to have had the desired impact. If levels of POPs in the environment diminish over time and remain below levels of concern in all regions, it is likely that the Convention's objective will have been met.
- 46. If the total number of Parties to the Convention is insufficient, or if the Convention only tackles a few persistent organic chemicals, this is likely to have an impact on the Convention's ability to achieve its objective.

- 47. An outcome of the Convention's implementation should be a reduction of the levels of POPs in humans and the environment over time.
- 48. Outcome indicators of the Convention's overall effectiveness could be:
 - (a) Levels of POPs in air;
 - (b) Levels of POPs in humans;
 - (c) Levels of POPs in other environmental media, when available.
- 49. Process indicators of the Convention's overall effectiveness could include:
 - (a) Number of Parties to the Convention;

(b) Number of new chemicals added to the Convention's Annexes.

2. Information currently available

- 50. The global monitoring report provides baseline levels of POPs in air and human milk or blood. These data could be used to assess trends in future evaluations. Data are available from all regions, although the extent and completeness of the data varies greatly between regions. Since it uses a standard protocol and a single reference laboratory, the World Health Organization human milk survey provides data sets that are comparable over time and between regions.
- 51. There are available data on trends only from a few regions and programmes. These indicate that levels of POPs in humans and in the environment are decreasing in those localities. While these trends are encouraging and suggest that measures to control POPs can reduce the levels of these substances in humans and the environment and thus their negative impacts on health, more information is needed to assess whether these trends apply to all regions and whether they are the result of measures taken under the Convention.

3. Challenges and gaps

- 52. The global monitoring report identified data gaps in several regions and subregions, together with a lack of knowledge on long-range transport in many regions. This information is needed to understand the factors affecting the levels of POPs over time and to interpret correctly monitoring results. The scant information hinders any evaluation of the Convention's effectiveness.
- 53. The global monitoring report concluded that the core media ambient air and human milk or human blood should continue to be used as the most appropriate and cost-effective option to assess trends in the levels of POPs over time. Other valuable data available in several existing programmes could also be used to establish temporal trends, provided that they meet the requirements for acceptance of data in the global monitoring plan. The report notes, however, that when new chemicals are included in the Convention it might be necessary to review the core media owing to the varying physico-chemical properties of these new substances.
- 54. To interpret POPs concentrations in air, programmes need to be consistent in their methods over time. When this is the case, data collected within a programme should be comparable. It is difficult, however, to achieve comparability between various programmes owing to unavoidable sources of variability. While comparability between programmes and regions would assist in a global assessment of trends, priority should be placed on internal comparability within a particular programme or region over time.

4. Suggestions for improvement

55. Many data gaps remain and continued monitoring will be needed to establish trends in all regions to ensure that the Convention's objective is being achieved globally. To provide data to evaluate trends in all regions in future, monitoring programmes and initiatives undertaken for the first global monitoring plan will need to continue. The global monitoring plan (UNEP/POPS/COP.4/31), as put forward for consideration by the Conference of the Parties, will be able to provide data on levels of POPs that can be used in assessing the Convention's effectiveness in the future.

F. Implementation plans

56. Under Article 7 of the Convention, Parties are obliged to prepare national implementation plans. This is a first step in implementing the Convention.

- 57. Potential indicators for this parameter include:
- (a) Number of Parties that have completed their plans and transmitted them to the Conference of the Parties;
 - (b) Number of Parties that have implemented their plans;
 - (c) Number of Parties that have reviewed and updated their plans.

2. Information currently available

58. A Party is to complete its national implementation plan two years after the Convention enters into force for it. As at 31 December 2008, the Secretariat had received 80 of the 130 national implementation plans that were due on or before this date. This is a 61 per cent submission rate. As at 31 December 2008, eight Parties had submitted their national implementation plan before they were due. The total number of national implementation plans received by the Secretariat as at this date was 88.

3. Challenges and gaps

- 59. A national implementation plan includes, among other things, information on existing legal and administrative measures to tackle chemicals covered by the Convention and an inventory of POPs production, use, export, import, obsolete POPs pesticide stockpiles and wastes, amounts of PCB contaminated oils and equipment, numbers of contaminated sites and quantity of unintentional POPs released.
- 60. The national implementation plans contain data that can be used as a point of comparison or baseline in future evaluations. Currently, in contrast to national reports, the data in the plans are not collected electronically or stored in a database, which hampers the compilation of data from the plans and their use for effectiveness evaluation.
- 61. National reports do not explicitly include information on the integration of national implementation plans into sustainable development strategies. If this information is collected as part of national reporting this factor could be used as an indicator.

4. Suggestions for improvement

- 62. Many Parties referred to their national implementation plans when compiling their national reports, and national reports enable the presentation of data for various years. Parties can therefore provide data for several periods, which can be used to estimate changes over time. If Parties were to provide these data, including data from their national implementation plans, in a consistent and comparable way, the use of such information in future evaluations would be facilitated.
- 63. Integrating national implementation plans into sustainable development strategies is a way to mobilize resources to implement the Convention. Data on the extent to which this has happened could provide an indication of the degree to which POPs issues are a priority for Parties. It could be useful to include a question in the national report questionnaire on whether the Parties have included national implementation plans in their country's sustainable development strategies.

G. Listing new chemicals in Annexes A, B or C

64. The aim of Article 8 of the Convention is to identify chemicals with POPs-like characteristics – and which thus pose threats to human health and the environment – for possible listing in Annexes A, B or C of the Convention.

- 65. The addition of POPs to Annexes A, B or C is to ensure that, in time, the Convention tackles most chemicals with POPs-like characteristics. While no chemicals have been added to the Convention at this time, the Review Committee has recommended that nine chemicals should be added to Annexes A, B or C (see documents UNEP/POPS/COP.4/16, UNEP/POPS/COP.4/17 and UNEP/POPS/COP.4/18). Potential indicators for this parameter include:
 - (a) Number of chemicals added to Annexes A, B or C;
- (b) Number of Parties for which the amendments to list the additional chemicals in Annexes A, B or C have entered into force.

H. Public information, awareness and education

66. Knowledge and awareness of the adverse effects of POPs, their proper management and alternatives are essential elements in ensuring that the Convention's objectives are met. The Convention encourages Parties and stakeholders to undertake awareness-raising activities.

1. Indicators

- 67. The level of awareness of POPs in the population, including the proportion of the population that handles POPs safely and in an environmentally sound manner, could be an outcome indicator for this parameter.
- 68. The following process indicators could give an indication of the extent to which such activities were being undertaken and their reach:
 - (a) Number of Parties that have taken measures to implement Article 10;
 - (b) Proportion of people reached through awareness and training programmes.

2. Information currently available

69. Currently, the only data related to this parameter that are readily available is the number of Parties that have taken measures to implement Article 10. Of the 43 Parties that provided national reports, 38 (88 per cent) indicated that they had taken measures and 36 (84 per cent) had done so as part of their national implementation plans.

3. Challenges and gaps

- 70. National reports do not provide details of the activities. To assess this parameter fully, a measure of the increased awareness and support for actions to control POPs in the population, together with data on improved handling of POPs, would be needed. This type of information is usually obtained by conducting surveys before and after awareness-raising campaigns. While individual Parties might wish to undertake such surveys, data from varying countries can only be compared if the surveys are conducted using a standard and robust methodology. The Conference of the Parties may consider undertaking periodic global surveys on level of public knowledge of POPs.
- 71. Another potential measure of the reach of programmes is to assess the proportion of people reached through awareness and training programmes. This type of information, while difficult to assess, is sometimes collected as part of the evaluation of awareness-raising campaigns.

4. Suggestions for improvement

- 72. The Conference of Parties could encourage Parties to evaluate regularly their public information, awareness and education activities and to report on the results of this evaluation. The format for national reports would need to be modified to ease the compilation and analysis of this information. To increase the comparability of such data, the Secretariat could provide guidance on collection of such information.
- 73. The Conference of the Parties may consider undertaking periodic global surveys on level of public knowledge of POPs.

I. Research, development and monitoring

74. The Convention encourages Parties to undertake research and development to gain a better understanding of POPs and their impacts on human health and the environment and to develop best environmental practices and techniques. Monitoring activities enable Parties to measure progress in meeting concerns about exposure to POPs.

1. Indicators

- 75. It is often difficult to assess the impact of a new discovery or new information as this may only be apparent after many years or happen in unexpected ways. The following indicators, however, would provide an overview of the extent to which these activities are being undertaken:
 - (a) Number of Parties that have taken measures to implement Article 11;
- (b) Amount of funds dedicated to research, development of best practices and techniques, and monitoring of POPs.

2. Information currently available

76. National reports request Parties to indicate whether they have taken measures to implement Article 11. Of 43 Parties, 32 (74 per cent) indicated that they had taken measures, with 30 (70 per cent) having done so through their national implementation plans.

3. Challenges and gaps

77. While the number of Parties that are involved in research, development, and monitoring is an indicator of the level of activity, it provides little information on the type or level of activity, for example monitoring as compared to research for alternatives. It could be useful to obtain more specific data from Parties as part of their national reports.

4. Suggestions for improvement

78. National reports could be modified to include more specific information on research, development and monitoring, such as the amount of funds dedicated to each type of activity. Parties would be encouraged to provide this information to the extent available. The Secretariat could invite international organizations also to provide this information on a periodic basis.

J. Technical assistance

79. The Convention recognizes that Parties have varying levels of capacity to meet concerns about POPs and adopt best available techniques and best environmental practices. It encourages the provision of technical assistance to narrow the gap and ensure that all Parties are able to implement the Convention's provisions.

1. Indicators

- 80. National reports currently include information on the number of Parties that have given and received technical assistance. A better measure would be the degree to which the needs are being met. Indicators of progress that could be considered include:
 - (a) Number of Parties giving or receiving technical assistance;
 - (b) Amount of technical assistance in financial terms provided or received.

2. Information currently available

- 81. National reports received indicate that 15 of the 43 countries replying provided technical assistance: 1 country from Asia, 4 countries from Central and Eastern Europe and 10 from the Western Europe and others group. Twelve countries indicated they had received technical assistance: four from Africa, two from Asia, five from Central and Eastern Europe and one from the Western Europe and others group.
- 82. National implementation plans include information on the cost of implementing the measures identified in the plans. In many developing countries and countries with economies in transition a large part of the cost of implementation may need to be obtained through technical and financial assistance.

3. Challenges and gaps

83. Implementation of the Convention could be impeded owing to lack of technical and financial capacity. It is often difficult to separate these two interconnected elements. To the extent that national implementation plans include cost estimates, they can also estimate the proportion of the plan that is dependent on obtaining technical assistance for its implementation.

4. Suggestions for improvement

84. Parties could be encouraged to provide a projection of annual technical assistance needs over the implementation period. For the data to be collected in a useful way, this would require additional guidance to Parties that update their plans and for national reports, including modification to the format.

K. Financial resources

85. Implementation of the Convention requires resources, meaning that it is important to assess the adequacy of the resources mobilized for implementation.

1. Indicators

- 86. An evaluation could therefore consider the following indicators:
 - (a) Number of Parties that mobilized national resources;
 - (b) Number of Parties that provided financial assistance;
- (c) Gap between estimated annual cost of implementation and the amount of funds allocated.

2. Information currently available

87. Of the 43 Parties that provided responses to the resources question in their national reports, 38 indicated they had mobilized national resources to implement the Convention. In addition, 15 indicated that they had provided assistance to developing countries and countries with economies in transition either directly or through multilateral agencies. By the end of the reporting period, October 31 2008, the Global Environment Facility had committed \$360 million to projects in the POPs focal area. This cumulative allocation had leveraged some \$440 million in co-financing to bring the total value of the portfolio to \$800 million (see document UNEP/POPS/COP.4/25).

3. Challenges and gaps

88. The data collected through the national reports provide an overview of activities but not any sense of the adequacy of the resources mobilized.

4. Suggestions for improvement

89. Parties could be encouraged to provide an indication of the quantity of resources mobilized for the implementation of the Convention and the total estimated need. Some of this information is already contained in national implementation plans and could be incorporated into any update of the plan, with the format of the national report modified to accommodate the collection of such data. The Global Environment Facility reports on the financial assistance that it provides to Parties, so the Secretariat could invite other multilateral agencies and donors to provide data on level of assistance provided and integrate this into the assessment.

L. Compliance

90. The Conference of Parties has yet to finalize its procedures for compliance. While there are many reasons why a Party may not be in compliance, the degree to which Parties have difficulty in meeting their obligations can provide insights into factors that affect the Convention's effective implementation.

Suggestions for improvement

91. When the Conference of the Parties finalizes its procedures for compliance, it should ensure that the procedures identify the factors that should be considered in the effectiveness evaluation and that the procedures adopted provide the data needed therefor.

IV. Considerations for future evaluations

- 92. The compilation of data from national reports in this evaluation was constrained by several factors, including:
- (a) Small number of reports received. A total of 130 Parties were to report on the initial deadline of 31 December 2006, but only 43 or 33 per cent of these had reported as of 31 December 2008. One Party that reported was not required to do so until the next reporting cycle. This made a total of 44 reports;
- (b) Not all Parties reported using the electronic reporting system, hampering the compilation of the data;
- (c) Differences in the ways in which Parties provided their information, which resulted in inaccuracies when tabulating data or limitations in the comparability of these data;
- (d) The format did not always provide specific enough information to be useful as indicators.
- 93. National reports are an essential source of information for effectiveness evaluation. To ensure that any assessment of the effectiveness is meaningful, all Parties need to submit their reports on time. Electronic reporting greatly facilitates the analysis of the data received and needs to be encouraged.

A. Reporting format

- 94. As indicated in chapter III above, the usefulness of reports received could also be improved through modifications to the reporting format to make it easier for Parties to provide data in a consistent and comparable fashion. This would also enable the use of national reports as a source of data on the various indicators needed for the evaluation.
- 95. The reporting questionnaire could also be modified to facilitate:
- (a) Entry of data for identified indicators so that they are comparable between Parties and consistent over time;
- (b) Identification of baseline data and consistency in methods of reporting so that comparisons over time can be made, even as estimates are improved;
- (c) Access to the information from previous reporting cycles, such as providing pre-completed forms to the Parties that include the data provided in previous reports;
- (d) Processing and analysis of the data contained in the reports and entered into the database, including minimizing potential for data entry errors and inconsistencies;
- (e) Production of standard reports to inform the Conference of the Parties as indicated in Articles 15–17, together with other reports as required.
- 96. Guidance and training for Parties in the compilation of national data, including inventories, and entering data into the database would help to ensure that reports are more consistent and comparable. This would facilitate the analysis of the data and improve the quality of the results.

B. Baseline

- 97. As mentioned earlier, an effectiveness evaluation is best done when data are available on the situation before and after an intervention. This allows an assessment of whether the intervention had the intended impact.
- 98. The intervention in this case is the Convention, which came in effect in 2004. Comparing the situation before 2004 and some time after 2004 would therefore provide some indication of its impact. The Convention, however, is implemented by actions taken by Parties. It takes effect at different times for different Parties, and many Parties had already taken some actions before it entered into force. In addition, there can be changes in the Convention over time, such as the addition of chemicals. This means that the year in which interventions began is not consistent worldwide. A flexible approach is therefore needed when selecting a baseline year:
- (a) The first global monitoring report will establish a baseline for the levels of POPs in the environment;
- (b) National implementation plans often contain data about the situation in a country before the implementation of the Convention by that Party. It is therefore possible for each Party to evaluate the situation in their own country before and after adherence to the Convention. The situation existing at the time of adherence to the Convention as described in national implementation plans can then be adopted as the baseline for measures taken and for amounts of chemicals produced, imported, exported or released;
- (c) National reports provide additional data on the situation of the country on a regular basis and can provide data to evaluate changes in indicators over time. There is a need, however, to ensure consistency in the way in which data are collected and compiled. For example, if new information becomes available on pesticide stockpiles or PCB-containing equipment, which was not included in the first compilation of data, comparisons will have to be made to a revised baseline that incorporates this new information. Such changes will have to be explained and reflected in national reports. As mentioned above, this also applies to POPs produced unintentionally.

V. Conclusions

- 99. In future, the global monitoring report should be able to provide trends in levels of POPs in air, humans and other relevant matrices. These data can indicate whether the Convention's objective is being achieved.
- 100. National reports provide data on measures taken and estimates of quantities of POPs manufactured, used, imported, exported, released unintentionally and disposed of. These data can be used to determine whether interventions have resulted in the desired outcome. To be used to evaluate the Convention's effectiveness, however, it will be necessary for all Parties to provide their reports on time. These reports will also have to contain data for various years, including the baseline year. In addition, refinement in the format for national reports will be needed to ensure greater consistency in reporting and inclusion of the necessary indicator data. This will facilitate compilation the information and improve the quality and usefulness of the evaluation's results.
- 101. Indicators of compliance with the Convention's provisions are also useful in assessing and interpreting trends and the impact of measures on these trends. These should be included as part of the elements of the effectiveness evaluation.
- 102. For ease of review, data can be summarized in a table form as illustrated in the sample summary table of indicators for the first report for effectiveness evaluation found in appendix II.
- 103. Possible arrangements to complete the first effectiveness evaluation and for the following evaluation are outlined in appendix III.

Appendix I

Quantities of POPs reported in national implementation plan inventories of 88 Parties to the Convention

	Annex A compounds						Annex B compounds		Annex C compounds	
Regions	Obsolete POPs pesticide stockpiles, incl. POPs contaminated stockpiles but not DDT	Other obsolete pesticides stockpiles	PCB-contar	minated oils	PCB- contaminated equipments	Exemption for Annex A	DDT stockp	iles (in tons)	Exemption for DDT production/ use	Total annual release estimated for unintentional POPs
	Q (t)	Q (t)	Q (t)	Q (I)	Q (t)		for use	as waste		(in gTEQ/year)
Central and Eastern Europe	12 997	2 613	10 169	242 800	18 499	_	_	1592	_	1 802
Latin America and the Caribbean	364	1 441	649	612 421	10 390	-	-	101 963	-	3 407
Africa	1 210	18 287	254 827	710	234 691	-	200	934	_	98 000
Asia and the Pacific	83	433	6 044 779	599 251	24 651	_	0.5	89	_	5 699
Western Europe and others	15	175	121 462	_	184 622	_	ı	-	_	22 049
Total *	14 666	22 948	6 431 886	1 455 182	472 853		201	104 584	1	130 958

^{*} May not sum up exactly, due to rounding

Appendix II

Sample summary table of indicators for the first report for effectiveness evaluation (data from 44 national reports) 3

Indicator	Baseline level	Baseline year	Level in 2015 evaluation report	Year of data	Trend
Measures to reduce or eliminate releases from in	l ntentional production and u	se	evaluation report		
Parties that report having measures that	82 %	2008			
meet or exceed the requirements of the					
Convention Annex A chemicals					
 Parties that report having banned or not 	93 %	2008			
registered POP pesticides (except DDT)					
 Parties that report having measures that 	91 %	2008			
meet or exceed the requirements of the					
Convention for DDT	= 2.0	2000			
 Parties that report having banned all uses of 	73 %	2008			
DDT Parties that report measures for the sound		2000			
 Parties that report measures for the sound management of PCBs 		2008			
Handling of PCB waste	75 %				
o Storage of PCB waste	78 %				
o Disposal of PCB waste	72 %				
Quantities of POPs manufactured		2005			
o Chlordane	1 party – 327 000 kg				
o Mirex	1 party – 6 000 kg				
o DDT	1 party – 1 592 kg				
 Quantities of POPs in stockpiles 		Data from national			
 Obsolete pesticides 	14 666 tons	implementation			
 Other pesticide stockpiles 	22 948 tons	plans			
 PCB-contaminated oils 	6 431 886 tons				
DCD	1 455 181 litres				
o PCB-contaminated equipment	472 853 tons				
o DDT stockpiles for use	201 tons 104 584 tons				
 DDT stockpiles as waste 	104 584 tons				

³ Suggested summary table that could be included in the baseline and subsequent evaluation reports.

Appendix III

Possible arrangements for future effectiveness evaluations

A. Introduction

- 1. The evaluation of the effectiveness of the Convention seeks to assess whether the measures adopted by the Convention and implemented by the Parties have had the desired effect.
- 2. The global monitoring report, national reports and compliance information are important sources of information on indicators that can be used to assess the Convention's effectiveness. These include process indicators that measure what has been done and outcome indicators that measure what has been achieved.
- 3. National implementation plans can provide data on the situation in a country before the Convention's implementation by that Party, which can be used to establish the baseline.

B. Possible elements for future effectiveness evaluations

- 4. Future evaluations should include both process and outcome indicators.
- 5. The evaluation would consider the Convention's objective and the aims of specific Articles such as:
 - (a) Article 3: Measures to reduce or eliminate releases from intentional production and use;
 - (b) Article 4: Register of specific exemptions;
 - (c) Article 5: Measures to reduce or eliminate releases from unintentional production;
 - (d) Article 6: Measures to reduce or eliminate releases from stockpiles and wastes;
 - (e) Article 7: Implementation plans;
 - (f) Article 8: Listing of chemicals in Annexes A, B and C;
 - (g) Article 10: Public information, awareness and education;
 - (h) Article 11: Research, development and monitoring;
 - (i) Article 12: Technical assistance;
 - (j) Article 13: Financial resources and mechanisms;
 - (k) Article 17: Non-compliance.

C. Possible arrangements for future effectiveness evaluations

6. There are various options that the Conference of Parties could consider for the implementation of the next effectiveness evaluation.

[Option 1 – the Secretariat performs the effectiveness evaluation

7. In this option the Secretariat would compile the data for effectiveness evaluation and report to the Conference of the Parties, which would evaluate the report provided and draw conclusions on the Convention's effectiveness.]

[Option 2 – incorporating effectiveness evaluation with the global monitoring plan

8. The global monitoring plan is a key component of the effectiveness evaluation. It would be possible to expand the terms of reference of the coordination group of the global monitoring plan to include effectiveness evaluation. In this option, the Secretariat would compile the data for effectiveness evaluation that would be considered by the expanded coordinating group. The Conference of the Parties would receive the report from the expanded coordinating group for endorsement.]

[Option 3 – a dedicated group of experts performs the effectiveness evaluation

9. The Conference of the Parties could nominate a group of experts that would guide and oversee the effectiveness evaluation. In this option, the Secretariat would compile the data for effectiveness evaluation that would be considered by this group of experts. The Conference of the Parties would receive the report from the group of experts for endorsement.]

Advantages and disadvantages

- 10. For the Secretariat to perform its task under option 1, it would need to engage human resources skilled in evaluation. The direct involvement of national experts would improve the quality of the evaluation, so a mechanism for this would also be needed. The Conference of the Parties would be left with the responsibility of undertaking the assessment directly.
- 11. Combining the effectiveness evaluation with the global monitoring plan would require a change in the overall composition of the experts in the groups to include experts in programme evaluation in addition to experts in monitoring. It would also increase the overall workload for the group members and make it more difficult for them to perform their duties.
- 12. The main advantage of option 3 is that it would allow for a group of people with specific expertise in evaluation to guide the process. As a group of experts selected by the Parties it can also result in greater confidence in the results of the evaluation. A mechanism for coordination between the global monitoring plan and the effectiveness evaluation could be instituted.
- 13. The third option is assumed in the terms of reference outlined below.

D. Possible terms of reference for an effectiveness evaluation working group

- 14. The Conference of the Parties will establish an effectiveness evaluation working group to coordinate and oversee the Convention's effectiveness evaluation.
- 15. The working group will consist of 10 experts nominated by the Parties, two from each United Nations region, two members of the coordinating group of the global monitoring plan, and invited experts in relevant fields, as necessary.
- 16. In the initial year, the working group will finalise the evaluation framework specifying the aims, expected outcomes, process indicators and outcome indicators using the indicators described in the Compilation of elements for the first effectiveness evaluation (as set out in the annex to the present document) as a base and propose evaluation intervals considering the schedule for national reporting and the global monitoring plan. Indicators will include data on trends in levels of POPs in air, humans and other matrices as appropriate; quantities of POPs manufactured, used, imported, exported, released and disposed of; implementation of measures at the national level; and data on implementation of various obligations under the Convention.
- 17. If required, the working group will recommend changes to the reporting format so that Parties report the indicator data in a consistent and comparable manner.
- 18. The Secretariat will collate data from the global monitoring report, national reports, compliance information and other sources.
- 19. The working group will review the data, draft the baseline effectiveness evaluation report using the elements and indicators of the framework, make recommendations including recommendations on the schedule for future global monitoring and effective evaluation reports, and submit its findings for consideration at the fifth meeting of the Conference of the Parties. The working group will meet as required and not more than once a year.
- 20. The working group will thereafter review the data that becomes available from the global monitoring programme and national reports and produce the second evaluation report, including its assessment and recommendations to the seventh meeting of the Conference of Parties. The working group will meet as required and not more than once a year
- 21. The working group will liaise with the global coordinating group of the global monitoring plan.

E. Activities, tasks and time frame for completion of the first (baseline) and second reports for effectiveness evaluations

22. The coordinating group for the global monitoring plan has recommended a six-year interval between global monitoring reports (paragraph 43 of the annex to document UNEP/POPS/COP.4/30). For the Conference of the Parties to consider an evaluation report at its seventh meeting, in 2015, the schedule outlined in table 1 would need to be followed.

Table 1 **Proposed schedule for the effectiveness evaluation (2009-2015)**

	Activities and tasks	Time frame
1.	Establishment of an expert working group	
1.1	Parties nominate experts through the Bureau members	June–July 2009
1.2	Expert group is formed	September 2009
2.	Evaluation framework, baseline for future evaluations	
2.1	Expert group reviews and finalizes process, outcome indicators, and reporting format	September–December 2009
	Expert group meets	November 2009
	Secretariat modifies reporting format	December–March 2010
2.2	Parties submit their national reports using the revised format	31 October 2010
2.3	Secretariat compiles data from national reports	November 2010
2.4	Expert group meets to review data, consider indicators, and draft evaluation report	December 2010
2.5	Baseline effectiveness evaluation report is completed	January 2011
2.6	Conference of the Parties completes first effectiveness evaluation, including baseline effectiveness evaluation report	May 2011
3	Future evaluations	
3.1	Parties update their inventories and other statistics on POPs taking into consideration recommendations of the Conference	May 2011–December 2013
3.3	Parties submit national reports to the Secretariat	30 September 2014
3.4	Secretariat compiles data from national reports	October 2014
4	Effectiveness evaluation	
4.1	Working group meets, considers the indicators, including ⁴ available monitoring data, and drafts evaluation report	November 2014
4.2	Evaluation report is completed	January 2015
4.3	Conference of the Parties considers the report	May 2015

⁴ Assuming that the global coordinating group of the global monitoring plan meets in October 2014.