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Item 5 (h) of the provisional agenda*

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

**Report of the ad hoc technical expert group for effectiveness
evaluation: proposed framework for the effectiveness evaluation
of the Minamata Convention on Mercury**

Note by the secretariat

1. The present note relates to the outcome of the work of the ad hoc technical expert group for effectiveness evaluation as mandated by decisions MC-1/9 and MC-2/10, with respect to the arrangements to be put in place to provide the Conference of the Parties with the information required to conduct an effectiveness evaluation of the Minamata Convention on Mercury.
2. The note contains two annexes. The first annex presents a draft decision for consideration by the Conference of the Parties at its third meeting. The second annex contains the report of the ad hoc technical expert group, which sets out the proposed framework for the effectiveness evaluation. The report in turn contains four appendices. The text for appendix I is contained in document UNEP/MC/COP.3/14/Add.1. Furthermore, the report of the ad hoc technical expert group is complemented by additional information contained in document UNEP/MC/COP.3/INF/15.

* UNEP/MC/COP.3/1.

Annex I

Draft decision MC-3[--]: Arrangements for the first effectiveness evaluation of the Minamata Convention on Mercury

The Conference of the Parties,

Welcoming the report¹ on the proposed framework for the effectiveness evaluation and monitoring arrangements under the Minamata Convention, and the complementing information developed by the ad hoc technical expert group on the basis of the mandates set out in decisions MC-1/9 and MC-2/10,²

Welcoming the monitoring activities already in place and the efforts of parties and others to support the provision of mercury monitoring data and their availability in the future,

Acknowledging the modelling capacities available for use in the effectiveness evaluation,

1. *Adopts* the proposed framework for the effectiveness evaluation of the Minamata Convention, including its methodology, indicators, reports, schedule and timeline;³
2. *Adopts* the terms of reference and mandate of the committee to be established to perform the effectiveness evaluation;⁴
3. *Decides* to establish the Effectiveness Evaluation Committee at its fourth meeting;
4. *Decides* on global monitoring arrangements⁵ and establishes a monitoring group to work in line with its terms of reference to produce a global monitoring report for the Effectiveness Evaluation Committee, as well as guidance and recommendations for standard operating procedures for monitoring activities, by the Conference of the Parties at its fourth meeting, to enable the Committee to convene ahead of the fifth meeting of the Conference of the Parties to complete the first evaluation of the Minamata Convention;
5. *Requests* the secretariat to support the work of the effectiveness evaluation, and to continue to collect information relevant to the effectiveness evaluation, including for the development of the required reports;
6. *Encourages* parties to actively engage in the implementation of the effectiveness evaluation framework, in particular:
 - (a) To continue to monitor mercury and to share the resulting data through the monitoring group established pursuant to paragraph 4;
 - (b) To collaborate in developing and improving modelling tools as needed and to carry out geographically representative monitoring of mercury in the environment, biotic media and vulnerable populations;
 - (c) To use the tools identified by the ad hoc technical expert group to support data harmonization, such as standard operating procedures, methodologies and techniques;
 - (d) To support the further development and long-term implementation of the global monitoring arrangements, if in a position to do so.

¹ UNEP/MC/COP.3/14.

² UNEP/MC/COP.3.INF/15.

³ UNEP/MC/COP.3/14, annex II, sections II and III.

⁴ UNEP/MC/COP.3/14, annex II, appendix II.

⁵ UNEP/MC/COP.3/14, annex II, appendix III.

Annex II

Report of the ad hoc technical expert group for effectiveness evaluation: proposed framework for the effectiveness evaluation of the Minamata Convention on Mercury

Executive summary

1. The present report proposes a framework for effectiveness evaluation and global monitoring arrangements under the Minamata Convention on Mercury. It was developed by the ad hoc technical expert group based on mandates provided in decisions MC-1/9 and MC-2/10, information contained in submissions by parties and stakeholders and other information. It represents the outcome of consultations and a review performed by the experts, including two meetings of the ad hoc group, in 2018 and 2019, respectively, with follow-up drafting and reviews by parties, experts and other commentators until September 2019.

2. Building on the identification of elements for the effectiveness evaluation framework and the review of monitoring activities included in the first report of the ad hoc group, which was submitted to the Conference of the Parties at its second meeting, the report proposes a framework that sets out the arrangements, the information and analysis flows and the reports on which the Effectiveness Evaluation Committee will base its findings on the effectiveness of the Convention.

Effectiveness evaluation framework

3. The effectiveness evaluation framework is based on four policy questions that will allow the Conference of the Parties to consider the extent to which the existing measures under the Convention will achieve the objective of protecting human health and the environment from the anthropogenic emissions and releases of mercury and mercury compounds. The policy questions are:

- (a) Have the parties taken actions to implement the Minamata Convention?
- (b) Have the actions taken resulted in changes in mercury supply, use, emissions and releases into the environment?
- (c) Have those changes resulted in changes in levels of mercury in the environment, biotic media and vulnerable populations that can be attributed to the Minamata Convention?
- (d) To what extent are existing measures under the Minamata Convention meeting the objective of protecting human health and the environment from mercury?

4. The framework relies on evaluating evidence along the causal pathway linking actions to implement the Convention with the associated changes in mercury supply, use, emissions and releases and the resulting changes in mercury levels and trends in those levels in the global environment, biotic media and vulnerable populations. Sets of process, outcome and monitoring indicators are proposed to inform the policy questions. The proposed indicators draw on the earlier work on elements of the effectiveness evaluation framework and a review of monitoring capacities and abilities.

5. It is likely, however, that monitoring will reveal an increased amount of mercury (e.g., in the atmosphere) due to factors outside the scope of the Convention. These include legacy mercury, natural mercury and the effects of climate change, such as increased availability of mercury stored in melting sea ice, ice sheets and permafrost and increased evaporation of mercury from the warming oceans. Consequently, it is unlikely that an unequivocal link will be established in the near future between levels of mercury observed in the environment, biotic media and vulnerable populations and actions taken under the Convention.

6. Many of the indicators developed following an article-by-article review have been clustered to enable synthesized analysis for an integrated picture; however, the indicators for articles considered as central or of cross-cutting importance to the overall provisions, such as articles 1 and 16, have not been clustered. The clusters are as follows:

- (a) Supply cluster (B): supply, storage and waste (articles 3, 10 and 11);
- (b) Demand cluster (C): products, processes and artisanal and small-scale gold mining (articles 4, 5 and 7);
- (c) Pressure cluster (D): emissions, releases and contaminated sites (articles 8, 9 and 12);

- (d) Support cluster (E): financial and technical assistance (articles 13 and 14);
- (e) Information and research cluster (H): information exchange, public information and research (articles 17, 18 and 19).

7. Article 22, paragraph 3, indicates that the evaluation should be conducted using available scientific, environmental, technical, financial and economic information. The framework foresees five to six reports to be produced based on such information:

- (a) The article 21 synthesis report, based on information submitted by parties under article 21 on reporting;
- (b) The emissions and releases report, modelled on the report *Global Mercury Assessment 2018*;⁶
- (c) The trade, supply and demand report, modelled on the 2017 report *Global Mercury: Supply, Trade and Demand*;⁷
- (d) The waste report, building on the 2018 report *Global Mercury Waste Assessment: Review of Current National Measures*;^{8,9}
- (e) The monitoring report, presenting the state of global mercury levels in the environment, biotic media and vulnerable populations, as well as trends over time.

8. When robust and reliable attribution tools and models are available, the sixth report, the attribution report, can be produced for the Effectiveness Evaluation Committee to consider in the formulation of its findings for the Conference of the Parties. A modelling subgroup may need to be established in this regard.

9. The framework provides for a flow of information and analysis that starts with information identification, compilation and synthesis (levels 1 to 3), followed by attribution (level 4) once robust and reliable models are available. Next, the Effectiveness Evaluation Committee integrates the information (level 5) to formulate its findings for the consideration of the Conference of the Parties (level 6).

10. The framework identifies roles played by various entities in the effectiveness evaluation process. It also foresees different scientific and technical functions: monitoring and synthesis (level 3), attribution (level 4) and integration (level 5). For the synthesis reports, the framework foresees a role for the secretariat with/through collaboration with partners.

11. The Effectiveness Evaluation Committee will work with all the reports produced to consider the policy questions indicated above, and will use an integrative approach to prepare its findings on the effectiveness of the Convention for its report to the Conference of the Parties. The Conference of the Parties will use the findings of the Effectiveness Evaluation Committee as a basis for its conclusions and recommendations on the effectiveness of the Convention.

12. The ad hoc technical expert group is submitting the framework for consideration and adoption by the Conference of the Parties at its third meeting in accordance with a timeline for the first cycle of the effectiveness evaluation, whereby the Conference of the Parties establishes the Effectiveness Evaluation Committee at its fourth meeting and considers the findings of that Committee at its fifth meeting.

Global monitoring arrangements (appendix III)

13. The report addresses the task assigned in decisions MC-1/9 and MC-2/10 with respect to global monitoring arrangements, by reviewing available monitoring data, identifying gaps, examining modelling capabilities and outlining global monitoring arrangements.

14. In considering monitoring information and data, the ad hoc group considered the matrices mentioned in decision MC-2/10: air, water, biota and humans. The group concluded that data on levels

⁶ United Nations Environment Programme, 2018. *Global Mercury Assessment 2018*. <https://wedocs.unep.org/handle/20.500.11822/27579>.

⁷ United Nations Environment Programme, 2017. *Global Mercury Supply, Trade and Demand*. <https://wedocs.unep.org/handle/20.500.11822/21725>.

⁸ United Nations Environment Programme, 2018. *Global Mercury Waste Assessment: Review of Current National Measures*. <https://wedocs.unep.org/handle/20.500.11822/22766>.

⁹ Grey highlighting has been used throughout the present report to indicate a difference in views among commentators with respect to the inclusion of the highlighted text.

of mercury in air, biotic media and humans were available or obtainable and would be comparable on a global basis.

15. Data on levels of mercury and mercury compounds in water are collected in connection with water quality monitoring in a number of countries. These data may be useful in tracking mercury resulting from local activities that release mercury; however, they will not indicate overall trends on a global basis. Levels of mercury in ocean water could be comparable on a global basis and could be collected by existing networks and ad hoc research programmes, but currently such work is done through research-based activities rather than through dedicated long-term monitoring programmes.

16. Global modelling capabilities were reviewed to better understand the availability of tools for use in the effectiveness evaluation; models complement monitoring data with estimation based on scientific understanding of mechanisms affecting mercury behaviour. Models for different media (air, humans, water, land, biota) vary in their ability and state of development. Atmospheric models have been extensively evaluated and can be applied to assess spatial gradients of atmospheric mercury concentrations and deposition, as well as temporal changes. By contrast, models for other media tend to be used only in research applications. Integrated models that work across media, drawing on expertise that bridges natural science, social science and engineering, are undergoing rapid development in the scientific and academic community, and can be expected to be available by 2023 for policy-relevant analyses.

17. In considering monitoring arrangements, the following key elements were identified:

- (a) Mercury data and their availability from human health and environmental monitoring programmes that achieve global coverage and contain at least core representative data from all regions;
- (b) Tools supporting data harmonization, such as standard operating procedures and a monitoring guidance document;
- (c) Expertise to gather and consolidate harmonized information that ensures comparability and consistency in monitoring data over the long term;
- (d) Modelling capabilities;
- (e) A periodic global monitoring report on mercury levels and trends;

18. The tasks described above will be carried out by a monitoring group, which will produce the periodic global monitoring report.

I. Introduction

19. At its first and second meetings, the Conference of the Parties tasked an ad hoc technical expert group to consider the arrangements to be put in place to provide the Conference of the Parties with the required information to conduct an effectiveness evaluation of the Minamata Convention on Mercury.¹⁰ Article 22 of the Minamata Convention on Mercury calls for the effectiveness of the Convention to be evaluated at regular intervals, with the first evaluation taking place within six years of entry into force.¹¹ It stipulates that at its first meeting, the Conference of the Parties will initiate the establishment of arrangements for providing itself with comparable monitoring data on the presence and movement of mercury and mercury compounds in the environment, as well as the trends in the levels of mercury and mercury compounds as observed in biotic media and vulnerable populations. It further stipulates that the evaluation will be conducted based on available scientific, environmental, technical, financial and economic information, including:

- (a) Reports and other monitoring information provided to the Conference of the Parties pursuant to paragraph 2 of article 22 of the Convention;
- (b) Reports submitted pursuant to article 21;
- (c) Information and recommendations provided pursuant to article 15;
- (d) Reports and other relevant information on the operation of the financial assistance, technology transfer and capacity-building arrangements put in place under the Convention.

20. At its first meeting, in decision MC-1/9, the Conference of the Parties recognized the urgent need for a framework for the effectiveness evaluation that included a strategic, cost-effective approach that provided appropriate and sufficient data, and further acknowledged publications such as the global mercury assessments prepared by the United Nations Environment Programme (UNEP) and the Minamata Convention initial assessments, funded by the Global Environment Facility, as important sources of information. In the same decision, the Conference of the Parties set out a road map for an ad hoc group of experts to develop arrangements for providing the Conference of the Parties with comparable monitoring data and the elements of an effectiveness evaluation framework, as well as the terms of reference for the Effectiveness Evaluation Committee.

21. The ad hoc group of experts began its work at a first meeting held in Ottawa, Canada (5–9 March 2018). The outcome of the first round of deliberations, including comments received during the subsequent open-for-comments period, was presented to the Conference of the Parties at its second meeting, held in Geneva in November 2018 (see documents UNEP/MC/COP.2/13 and UNEP/MC/COP.2/INF/8).

22. The Conference of the Parties deliberated on the outcome of the work of the ad hoc expert group and, in decision MC-2/10, extended the group's mandate and amended its membership and qualifications to include the additional expertise needed to enable it to complete its work for presentation to the third meeting of the Conference of the Parties, in November 2019. With respect to the effectiveness evaluation framework, the Conference of the Parties in its decision 2/10 also requested the ad hoc expert group to undertake the following tasks:

- (a) Using the objective of the Minamata Convention, review and assess the detailed article-by-article process and outcome indicators in document UNEP/MC/COP.2/INF/8 and elaborate on the sources of information and baselines for those indicators, considering cost-effectiveness, practicality, feasibility and sustainability, and, on that basis, provide detailed rationales for the recommended indicators;

¹⁰ In decision MC-1/9 on the establishment of arrangements in regard to effectiveness evaluation, the Conference of the Parties established an ad hoc group of experts on arrangements for providing the Conference of the Parties with comparable monitoring data and elements of an effectiveness evaluation framework under article 22 of the Minamata Convention, and set out a road map in that regard. The ad hoc expert group produced a report that was presented to the second meeting of the Conference of the Parties (see documents UNEP/MC/COP.2/13 and UNEP/MC/COP.2/INF/8). Subsequently, in decision MC-2/10 on effectiveness evaluation, the Conference of the Parties extended the terms of reference of the ad hoc technical expert group, adopted a road map for its subsequent work, requested the group to develop the terms of reference for global monitoring arrangements, and also requested it to report on its progress to the third meeting of the Conference of the Parties.

¹¹ While the first effectiveness evaluation of the Minamata Convention on Mercury is to take place within six years of the entry into force of the Convention, the Conference of the Parties is to decide on the future interval of the effectiveness evaluations.

- (b) Identify which recommended indicators require monitoring data, in particular in relation to the control measures and objectives set out in the articles of the Convention;
- (c) Develop a methodology for integrating the recommended indicators with a view to providing an integrative picture of the general effectiveness of the Convention, (e.g., by use of cross-cutting indicators);
- (d) Amend the recommended draft terms of reference of the Effectiveness Evaluation Committee and the schedule for the first effectiveness evaluation, if needed, on the basis of the outcome of the above.

23. The ad hoc expert group met in Geneva in April 2019 to deliberate specifically on the report that it was to present to the third meeting of the Conference of the Parties. The present report is the outcome of the work begun at that meeting¹² and completed over the subsequent months (including an open-for-comments period from 1 August to 5 September 2019).

24. In line with the guidance provided in decision MC-2/10, the present report consists of an executive summary and four sections: section I is an introduction to the mandate of the ad hoc technical expert group and its report on the proposed arrangements to be put in place to provide the Conference of the Parties with the information required to conduct an effectiveness evaluation of the Convention; section II provides an overview of the proposed effectiveness evaluation framework, including laying out four policy questions identified as key to evaluating the effectiveness of the Convention; section III lays out the constituent elements of the framework in detail, describing the proposed methodology and schedule for the effectiveness evaluation; and section IV outlines further issues for the consideration by the Conference of the Parties. The report also contains four appendices: appendix I, contained in document UNEP/MC/COP.3/14/Add.1, outlines technical information related to monitoring; appendix II presents the draft terms of reference of the Effectiveness Evaluation Committee; appendix III outlines the proposed global monitoring arrangements and draft terms of reference for the monitoring group; and appendix IV describes the reports to be produced for the Committee.

25. The ad hoc group developed a document UNEP/MC/COP.3/INF/15 as a supplement to the present report and the addendum thereto. Part I of that document provides a more detailed review of available monitoring data and background on the proposal for monitoring activities, with further scientific and technical details. Part II contains a proposal for elements of a mercury monitoring guidance document to be developed under the global monitoring arrangements to be established by the Conference of the Parties.

26. The ad hoc technical expert group proposes that the Conference of the Parties adopt the framework and monitoring arrangements and the proposed timeline for the first cycle of the effectiveness evaluation at its third meeting and establish the Effectiveness Evaluation Committee at its fourth meeting, as this will enable the Conference of the Parties to consider the findings of the Committee at its fifth meeting.

II. Overview of the effectiveness evaluation framework

27. The objective of the Minamata Convention, per article 1, is “to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds”. The goal of an effectiveness evaluation is to consider the extent to which the Convention is achieving that objective. This means considering whether measures taken by parties in response to the Convention have resulted in reductions in supply, use, emissions and releases that have, in turn, led to lower risks to human health and the environment (compared with what would have occurred had the Convention not been implemented).

28. The framework for evaluating the effectiveness of the Minamata Convention, as proposed by the ad hoc technical expert group, relies on evaluating evidence along the causal pathways linking actions to implement the Convention with the associated changes in mercury supply, use, emissions and releases, and the resulting changes in mercury levels and trends in those levels in the global environment, biotic media and vulnerable populations. Changes in mercury levels attributable to the

¹² At the meeting, the ad hoc technical expert group had before it a compilation of comments on the effectiveness evaluation framework (UNEP/MC/EE.2/5), an overview of information submitted by parties and others (UNEP/MC/EE.2/3) and the compilation of comments on the report submitted by the group to the Conference of the Parties at its second meeting (UNEP/MC/EE.2/4).

Convention will be assessed, using the information collated and the proposed process, outcome and monitoring indicators, with a view to answering four policy questions.

A. Policy questions

29. Four policy questions have been defined to serve as a basis for the effectiveness evaluation. These questions are expected to provide the answers needed by the Conference of the Parties in its consideration of whether the Minamata Convention measures are adequate to address the challenges of anthropogenic mercury emissions and releases.

30. The first policy question is: Have the parties taken actions to implement the Minamata Convention? To answer this question, the framework contains a succinct set of “process” indicators intended to reflect the level of implementation of the Convention by parties. These indicators can be used to evaluate whether the implementation of measures under the Convention can be credibly linked to changes in emissions and releases. They can also be used to identify common challenges in implementation that may undermine the Convention’s effectiveness. The process indicators are based primarily on reporting mandated by the Convention, supplemented by other available scientific, environmental, technical, financial and economic information, as per article 22, paragraph 3.

31. The second policy question is: Have these actions resulted in changes in supply, use, emissions and releases of mercury into the environment? To answer this question, the framework contains a set of “outcome” indicators that reflect estimated changes in supply, demand, emissions and releases of mercury owing to Convention measures, as reported by parties under the Convention. It is suggested that these data be supplemented with context provided by comprehensive estimates of global mercury supply, demand, emissions and releases.

32. The third policy question is: Have these changes resulted in changes in levels of mercury in the environment, biotic media and vulnerable populations that can be attributed to the Minamata Convention? Article 22 of the Convention indicates that monitoring data on “the presence and movement of mercury and mercury compounds in the environment as well as trends in levels of mercury and mercury compounds observed in biotic media and vulnerable populations” should be used in the effectiveness evaluation. Attributing changes in human and environmental levels of mercury to Convention measures is challenging, but possible. Past and present emissions from human activities combine with natural sources and other factors affecting mercury cycling, such as atmospheric and ecosystem characteristics, which can evolve (e.g., through climate change). The framework outlines how global mercury measurements can be used to assist in the assessment of how successful actions to implement the Convention have been.

33. The complex system of global mercury measurements generates observed levels of mercury in the environment, biotic media and vulnerable populations. The scientific knowledge required to directly link the observed levels of mercury to their sources is still developing. Integrated models are therefore needed to estimate how changes in emissions and releases from the sources covered by the Convention contribute to changes in the levels observed in these receptors. The ongoing development and validation of such models requires both monitoring data and scientific knowledge of environmental processes and will assist in attributing changes in mercury levels in the environment to change in mercury emissions and releases.

34. The fourth policy question is: To what extent are existing measures under the Minamata Convention meeting its objective of protecting human health and the environment from mercury? The response to the third policy question will indicate the extent to which the Convention is affecting levels of and trends in mercury in the environment, biotic media and vulnerable populations. The fourth policy question considers the extent to which the measures under the Convention are meeting the objective of protecting human health and the environment from mercury. Is the Convention delivering on its full potential to reduce mercury supply, use, emissions and releases? If not, why not? Would delivering at full potential prevent the majority of anthropogenic emissions and releases of mercury, or only a small portion? Furthermore, are there measures in place to manage the residual risk in addressing the exposure of people to mercury?

B. Expert-led synthesis for consideration by the Effectiveness Evaluation Committee

35. The proposed framework envisions the synthesis of information and knowledge in synthesis reports that provide a scientific and technical perspective on the first three policy questions articulated above, for consideration by the Effectiveness Evaluation Committee. As models and tools for attribution become available, an attribution report that provides a scientific and technical perspective on the four policy questions would also be produced. The attribution report would interpret the

linkages between policy actions, emissions reductions and resulting mercury levels, using available data sources, modelling techniques, analytical tools drawn from natural and social sciences and other relevant knowledge.

36. Science has not yet developed reliable integrated models for forecasting long-term changes in mercury levels resulting from emissions reductions that fully take into account the complexities of mercury in the environment. Pending the availability of suitable confirmed multi-media models, the attribution report may not be ready for the first effectiveness evaluation but will be for subsequent ones. Therefore, it should be noted that earlier evaluations of the effectiveness of the Minamata Convention may have greater uncertainty than those performed once improvements have been made to such forecasting models.

37. The Effectiveness Evaluation Committee will utilize the synthesis reports (and, when available, the attribution report) to respond to the four policy questions and will use an integrative approach to prepare its findings on the effectiveness of the Convention for presentation to the Conference of the Parties.

38. Table 1 gives an overview of the effectiveness evaluation framework, from the above-mentioned four policy questions to the indicators proposed for evaluation, the required reports and the attribution report that will be prepared for the consideration of the Effectiveness Evaluation Committee and its report to the Conference of the Parties. The constituent elements of the framework are explained in detail in section II.

Table 1

Effectiveness evaluation framework, from the policy questions and indicators to the required reports for the Effectiveness Evaluation Committee

Policy questions	1. Have the parties taken actions to implement the Minamata Convention?	2. Have these actions resulted in changes in supply, use, emissions and releases of mercury into the environment?	3. Have these changes resulted in changes in levels of mercury in the environment, biotic media and vulnerable populations that can be attributed to the Minamata Convention?	4. To what extent are existing measures under the Minamata Convention meeting its objective of protecting human health and the environment from mercury?
Indicators	Process indicators	Outcome indicators Monitoring indicators	Monitoring indicators	<p>Level 5 The Effectiveness Evaluation Committee will respond to these policy questions and use an integrative approach to prepare its findings based on the following synthesis reports:</p> <ol style="list-style-type: none"> 1. Article 21 synthesis report 2. Emissions and releases report 3. Trade, supply and demand report 4. Waste report 5. Monitoring report <p>The above information will be supplemented by the attribution report when available.</p> <p>In formulating its findings, the Effectiveness Evaluation Committee may also draw on additional information as required.</p>
Indicator clusters	1. Supply cluster (B) 2. Demand cluster (C) 3. Pressure cluster (D) ---- 4. Support cluster (E) 5. Information and research cluster (H)	1. Supply cluster (B) 2. Demand cluster (C) 3. Pressure cluster (D) ---- 4. Support cluster (E) 5. Information and research cluster (H)	1. Pressure cluster (D)	
Information sources	Parties: Article 21 reports (main source)	Parties: article 21 reports (main source)	Parties: article 21 reports Monitoring networks	
Secretariat documents for the Conference of the Parties, in accordance with article 22	- Report on article 21 reports - Report of the Implementation and Compliance Committee - Reports on the financial mechanism (article 13) - Reports on capacity-building, technical assistance and technology transfer (article 14)	- Report on article 21 reports	Not applicable	
Reports to be prepared for the Effectiveness Evaluation Committee	Levels 1-3	1. Article 21 synthesis report on progress made by parties in fulfilling their obligations under the Minamata Convention (corresponding indicators in article 21 reports) 2. Report on emissions and releases of mercury into the environment (pressure cluster) 3. Report on trade in, the supply of and demand for mercury in the economy (supply and demand cluster) "Economic movement of mercury" 4. Waste report (supply and demand cluster, pressure clusters) "Mercury remaining in the economy"	Level 3 5. Monitoring report	
			Level 4 6. Attribution report	
Outcome	The Conference of the Parties will consider the findings of the Effectiveness Evaluation Committee on the four policy questions.			Level 6



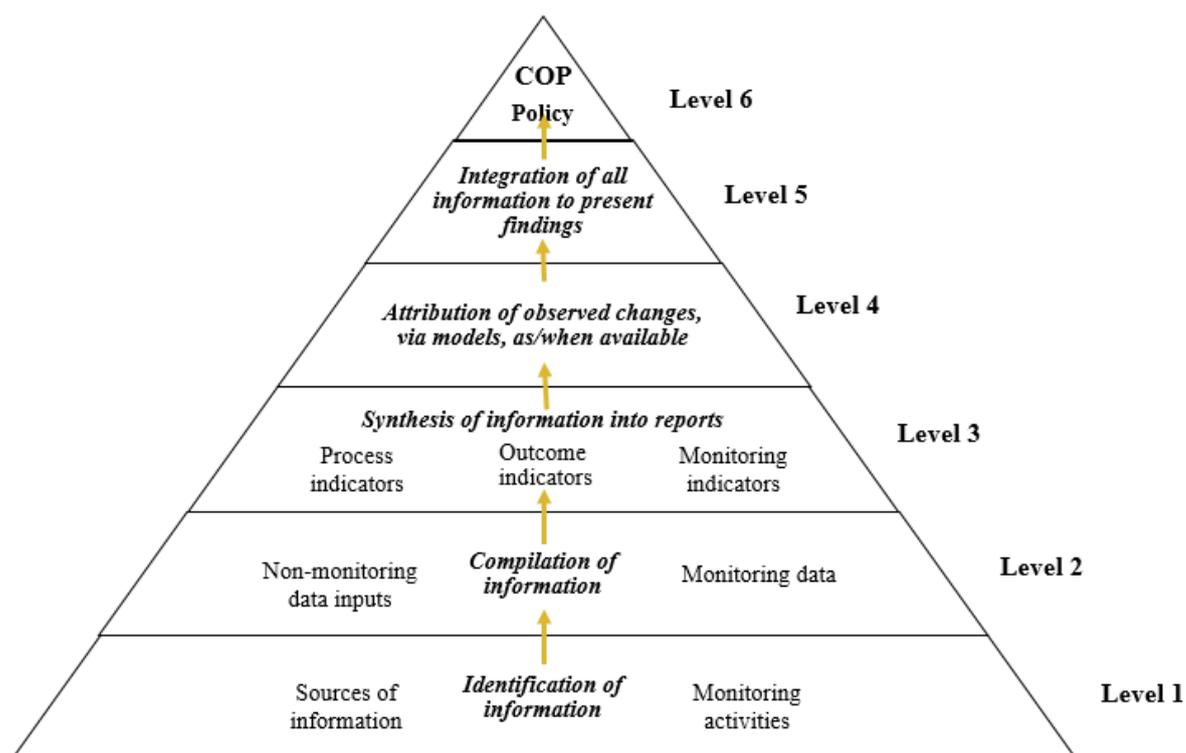
III. Proposed methodology and schedule for the effectiveness evaluation

A. Information and analysis flow for the proposed effectiveness evaluation

39. The effectiveness evaluation will be carried out through a series of sequential steps of data identification and collection, compilation of information, assessment, analysis, synthesis, attribution (if possible) and integration. The framework presents the flow of information, beginning with identifying and collecting information, to compiling information, to synthesizing information (levels 1 to 3). The framework then foresees an attribution function (level 4) before reaching the Effectiveness Evaluation Committee (level 5), where information will be integrated to allow the Committee to formulate its findings for the consideration of the Conference of the Parties (level 6). The flow of information and analysis along the various levels is depicted in figure 1, below, and explained in more detail thereafter.

Figure 1

Information and analysis flow



Abbreviations: COP, Conference of the Parties.

(a) Level 1 – identification: As a first step, information resources available to support the effectiveness evaluation will be identified and gathered. This will include the following reports mandated by the Convention: reports from parties (per article 21); reports of the Implementation and Compliance Committee (per article 15); reports on the financial mechanism (per article 13); reports on capacity-building, technical assistance and technology transfer (per article 14); emission inventories (per article 8); release inventories (per article 9); and reports on progress in implementing national action plans on artisanal and small-scale gold mining (per article 7). It may also include other relevant submissions.

As reporting may be incomplete, these reports will be supplemented by other available scientific, environmental, technical, financial and economic information, per article 22, paragraph 3, and article 19.

Clear criteria for the information identified at this level should be maintained (e.g., including peer-reviewed research articles and official publications such as national reports). The global monitoring arrangements, which are specified in appendix III, will determine which monitoring information will be included in the effectiveness evaluation.

(b) Level 2 – compilation: The data relevant to the effectiveness evaluation will be extracted from the selected resources and compiled into a format that will enable their use in the

subsequent attribution and integration stages. Quality control of data should be conducted at this stage. For monitoring data, this may include the compilation of monitoring data into a global/central database with a consistent format, common quality control/quality assurance procedures, an assessment of confidence and other relevant elements.

(c) Level 3 – synthesis: The compiled data will be used to create a set of reports that synthesize the information collected and inform the answers to the four policy questions. In the light of the desire of the Conference of the Parties that the evaluation provide an integrative picture of the general effectiveness of the Convention, as expressed in the amended mandate of the ad hoc technical expert group in decision MC-2/10, the group anticipates that the following synthesis reports will be required (see appendix IV for descriptions of all reports to be prepared for the Effectiveness Evaluation Committee):

- (i) The article 21 synthesis report, based on information provided by parties under article 21 on reporting;
- (ii) The emissions and releases report, modelled on the report *Global Mercury Assessment 2018*;⁶
- (iii) The trade, supply and demand report, modelled on the 2017 report *Global Mercury: Supply, Trade and Demand*;⁷
- (iv) The waste report, building on the 2018 report *Global Mercury Waste Assessment: Review of Current National Measures*;⁸
- (v) The monitoring report, presenting the state of global mercury levels in the environment, biotic media and vulnerable populations, as well as trends over time, produced by the monitoring group.

These reports will present the information on the process, outcome and monitoring indicators to facilitate the consideration by the Effectiveness Evaluation Committee of the four policy questions. They will include scientific and technical background and accessible visual presentations.

(d) Level 4 – attribution: The synthesis reports (and, where needed, the underlying and/or additional data) on Convention actions, emissions, releases and monitoring data may be used for the sixth report, namely the attribution report, when the tools for its production are available. The attribution report would distinguish between the process, outcome and monitoring indicators to facilitate the efforts of the Effectiveness Evaluation Committee to address the four policy questions. It would take into account other information (such as socioeconomic information, technology innovation, climate data and key global policies) as necessary. The attribution report would be produced by a modelling subgroup (see appendix IV for a detailed description of the attribution report).

The level 4 analyses would likely include modelling to estimate how changes in emissions and releases resulting from the Convention measures have contributed to changes in mercury levels in the environment, biotic media and vulnerable populations. The attribution assessment would also seek to evaluate long-term trends so as to interpret the relevance of social, technical and economic data in the context of the effectiveness of the Convention vis-à-vis its objective. While the attribution report would be an evidence-based scientific and technical report, it would also be accessible to non-technical readers and include visual representations.

(e) Level 5 – integration: The five synthesis reports, supplemented by the attribution report, when available, will be produced for the Effectiveness Evaluation Committee, which will use that information in an integrative approach to consider the four policy questions and formulate findings for presentation to the Conference of the Parties. The Committee may include in its report suggestions for improving future cycles of effectiveness evaluation.

(f) Level 6 – Conference of the Parties: At this final level, the Conference of the Parties receives and reviews the findings of the Effectiveness Evaluation Committee and makes its determinations regarding the effectiveness of the Convention.

B. Development of indicators

40. The Minamata Convention includes a number of measures that seek to control, reduce or eliminate the major sources and uses of mercury, as well as a set of further stipulations that oblige parties to work together to support each other in the overall endeavour to protect people and the environment from the adverse effects of mercury. To provide a holistic picture of the effectiveness of the measures and provisions of the Convention, the ad hoc technical expert group used an integrative approach to identify possible indicators.

41. Three types of indicators are proposed – process, outcome and monitoring – to inform the consideration of the four policy questions guiding the effectiveness evaluation. The proposed indicators draw on previous work on elements of the effectiveness evaluation framework and monitoring capacities and abilities.
42. Following an article-by-article review, the proposed indicators were clustered as follows to enable synthesized analysis in the proposed reports:
- (a) Supply cluster (B): supply, storage and waste (articles 3, 10 and 11);
 - (b) Demand cluster (C): products, processes and artisanal and small-scale gold mining (articles 4, 5 and 7);
 - (c) Pressure cluster (D): emissions, releases and contaminated sites (articles 8, 9 and 12);
 - (d) Support cluster (E): financial and technical assistance (articles 13 and 14);
 - (e) Information and research cluster (H): information exchange, public information and research (articles 17, 18 and 19).
43. Recognizing the central nature of article 1 (setting out the objective of the Convention) and the cross-cutting nature of article 16 (on the health aspects), those articles were kept separate for the purposes of identifying indicators.
44. The rationale underlying the proposed indicator types is as follows:
- (a) Process indicators are required to determine whether the parties taken actions to implement the Minamata Convention;
 - (b) Outcome indicators are required to determine whether the actions taken resulted in changes in mercury supply, use, emissions and releases into the environment. For each cluster of articles, the ad hoc expert group identified the parties were taking actions on a key policy measure and the outcomes of those actions;
 - (c) Monitoring indicators (which may denote outcomes) are needed to provide validated, scientific information to inform and support policymaking and decision-making on the impact of control measures.
45. The indicators were largely developed keeping in mind the data and reports mandated by the reporting requirements of the Convention or related bodies (including, for example, reports of the Global Environment Facility). These reports will be supplemented by other available data compiled in the synthesis reports and the attribution report. The use of already available data ensures that the indicators are cost-effective. Further, the data will be produced on a recurrent basis for the life of the Convention and thus are sustainable.
46. The indicators are formulated so as to be practical and feasible. They are designed to be easily counted and calculated and easily understood (they do not represent complex functions). If article 21 reporting data are submitted electronically to the secretariat, their calculation should be especially straightforward.
47. Baselines are considered fundamental to an effectiveness evaluation, allowing indicators to be evaluated over time. There is no formal process under the Convention for establishing baselines. There are two types of baseline: the “before-after” baseline and the “with-without” baseline. The former is suitable for indicators that are relatively stable, for which a time value prior to the Convention’s entry into force can be used throughout the evaluation process. The latter is suitable for indicators that fluctuate over time due to factors other than the interventions made as a result of the provisions of the Convention, such as socioeconomic and demographic aspects, climate change, ongoing initiatives and shifts in lifestyle, which will all have an impact on the baseline value over the medium and long term.
48. Table 2 presents the proposed indicators, which are complemented by the monitoring indicators identified in table 4. It is to be noted that table 2 contains a sizable number of indicators for the consideration of the Conference of the Parties. The ad hoc technical expert group developed those indicators at a time when data and information gathering had yet to take place, and it is thus likely that some of them will have to be fine-tuned in the light of the amount and quality of data and information available, and that gap-filling will be necessary. Some of the indicators may even prove not to be workable and eventually not be used. The group nevertheless felt that it was important to present a longer list for consideration.

Table 2

Proposed indicators for evaluating the effectiveness of the Minamata Convention, by article

A: Article 1 (objective) (The indicator for article 1 is to be read with the relevant monitoring indicator in table 4.)		Source of information on the indicator	Baseline for the indicator
A1. Cross-cutting monitoring indicator	Levels of mercury in the environment and in humans due to anthropogenic emissions and releases	Attributive modelling	Amount in the first evaluation (if models are available)
Notes	<ul style="list-style-type: none"> ▪ Attribution is to be estimated using models yet to be developed; thus, information for this indicator may or may not be available for the first effectiveness evaluation cycle. ▪ Estimates from modelling are to be accompanied by relevant notes on modelling uncertainties. ▪ In case of non-availability of information from models, levels of mercury and trends in mercury levels (changes over time) could be used for attribution purposes. 		
B: Supply cluster Article 3 (mercury supply sources and trade); article 10 (environmentally sound interim storage of mercury other than waste mercury); article 11 (mercury waste)		Source of information on the indicator	Baseline for the indicator
B1. Overall process indicator for articles 3, 10 and 11	Proportion of parties that have implemented key provisions under this cluster (encompassing all process indicators below, i.e., B5, B6, B7, B8, B9 and B13)	- Article 21 reporting	Amount in the first evaluation
B2. Additional cross-cutting outcome indicator for articles 3, 10 and 11	Estimated global supply of mercury, in tonnes per year	- Synthesized information from individual indicators for articles 3, 10 and 11	Amount in the first evaluation
Article 3			
B3. Outcome indicator for article 3	Total amount of mercury mined from primary mercury mines	- 2017 report on global mercury supply, trade and demand - Article 21 reporting - ASGM national action plan reports	Amount in the first evaluation
B4. Outcome indicator for article 3	Amount of mercury traded, broken down by specific purpose	- Article 3 forms	Amount in the first evaluation
B5. Process indicator for article 3	Number of parties that have endeavoured to identify stocks and sources of supply	- Article 21 reporting	Number in the first evaluation
B6. Process indicator for article 3	Proportion of parties with excess mercury from chlor-alkali production that have taken measures for such mercury to be subject to final disposal	- Article 21 reporting - World Chlorine Council reports	Percentage in the first evaluation
B7. Process indicator for article 3	Number and proportion of parties trading in mercury	- Article 21 reporting - Article 3 forms	Amount in the first evaluation
B8. Process indicator for article 3	Volume of mercury being traded	- Article 21 reporting	Amount in the first evaluation
Article 10			
B9. Process indicator for article 10	Number and proportion of parties that have taken measures to ensure sound interim storage	- Article 21 reporting	Amount in the first evaluation
B10. Outcome indicator for article 10	Amount of mercury stored in an environmentally sound way (as identified in the inventory of stocks)	- Article 21 reporting	Amount in the first evaluation

Article 11			
B11. Outcome indicator for article 11	Amount of waste containing mercury or mercury compounds subject to final disposal	- Article 21 reporting	Amount in the first evaluation
B12. Outcome indicator for article 11	Number of parties with facilities for final disposal of waste containing mercury or mercury compounds	- Article 21 reporting	Amount in the first evaluation
B13. Process indicator for article 11	Number of parties that have measures in place to manage mercury waste in an environmentally sound manner	- Article 21 reporting	Amount in the first evaluation
Notes	<ul style="list-style-type: none"> ▪ Data from non-parties could also be important in some instances. 		

C: Demand cluster		Source of information on the indicator	Baseline for the indicator
Article 4 (mercury-added products); article 5 (manufacturing processes in which mercury or mercury compounds are used); article 7 (artisanal and small-scale gold mining)			
C1. Cross-cutting process indicator for articles 4, 5 and 7	Proportion of parties that have implemented key provisions under this cluster	- Synthesized information from individual indicators for articles 4, 5 and 7	Percentage in the first evaluation
C2. Cross-cutting outcome indicator for articles 4, 5 and 7	Global use of mercury in the manufacturing of products or processes, in tonnes per application	- Information from industry sources	Amount in the first evaluation
Article 4			
C3. Process indicator for article 4	Number of parties having appropriate measures to prevent the manufacture, export or import of mercury-added products listed in part I of annex A	- Article 21 reporting	Number in the first evaluation
C4. Process indicator for article 4	Number of exemptions per product category that are still valid	- Registry of exemptions	Number in the first evaluation
C5. Process indicator for article 4	Number of parties that have taken two or more measures for the mercury-added products listed in part II of annex A	- Article 21 reporting	Number in the first evaluation
C6. Additional outcome indicator for article 4	Volume, in tonnes of mercury-added products (a) imported and (b) exported, in units per year, for each product category in part I of annex A.	- Trade and customs data	Amount in the first evaluation
Article 5			
C7. Process indicator for article 5	Number of parties with exemptions for annex B, part I, processes that are still valid	- Registry of exemptions	Number in the first evaluation
C8. Process indicator for article 5	Number of parties having measures in place to not allow the use of mercury or mercury compounds in manufacturing processes listed in part I of annex B	- Article 21 reporting	Number in the first evaluation
C9. Process indicator for article 5	Proportion of parties that have processes subject to article 5, para. 3, that have taken all measures for the respective processes listed in annex B, part II	- Article 21 reporting	Percentage in the first evaluation
Article 7			
C10. Outcome indicator for article 7	Total amount of mercury used in ASGM globally, in tonnes per year	- Article 21 reporting - ASGM national action plans and reviews thereof - Notifications	Amount in the first evaluation
C11. Process indicator for article 7	Proportion of parties declaring more than insignificant ASGM that have submitted a national action plan	- Notifications	Percentage in the first evaluation

C12. Process indicator for article 7	Proportion of parties that have submitted a national action plan and have reviewed it	- Article 7 reviews	Percentage in the first evaluation
Notes	<ul style="list-style-type: none"> ▪ Some data on products may not be easily obtainable. 		

D: Pressure cluster		Source of information on the indicator	Baseline for the indicator
Article 8 (emissions); article 9 (releases); article 12 (contaminated sites)			
D1. Overall process indicator for articles 8, 9 and 12	Share of parties that have implemented key provisions under this cluster	- Article 21 reporting	Percentage in the first evaluation
D2. Cross-cutting outcome indicator for articles 8, 9 and 12	Total amount of mercury emitted and released	- Global Mercury Assessment 2018 - Inventories - Minamata Convention initial assessments	Amount in the first evaluation
Article 8 (The indicators for article 8 are to be read with the relevant monitoring indicators in table 4.)			
D3. Outcome indicator for article 8	Total amount of mercury emitted for each point source category in annex D	- Article 21 reporting - Inventories	Number in the first evaluation
D4. Process indicator for article 8	Number of parties that require BAT/BEP or emission limit values consistent with the application of BAT	- Article 21 reporting	Number in the first evaluation
D5. Process indicator for article 8	Number of parties that have put in place control measures for existing sources (per each of the measures set out in article 8, para. 5)	- Article 21 reporting	Number in the first evaluation
D6. Process indicator for article 8	Number of parties that have established and maintained an inventory of emissions	- Article 21 reporting	Number in the first evaluation
Article 9 (The indicators for article 9 are to be read with the relevant monitoring indicators in table 4.)			
D7. Outcome indicator for article 9	Total amount of mercury releases in the inventory from relevant sources	- Article 21 reporting - Inventories	Number in the first evaluation
D8. Process indicator for article 9	Number of parties that have identified relevant sources	- Article 21 reporting	Number in the first evaluation
D9. Process indicator for article 9	Number of parties that have established and maintained an inventory of releases from relevant sources	- Article 21 reporting	Number in the first evaluation
Article 12			
D10. Process indicator for article 12	Number of parties that have developed strategies for identifying and assessing sites contaminated by mercury or mercury compounds	- Article 21 reporting	Number in the first evaluation
D11. Process indicator for article 12	Number of parties that have developed an inventory of contaminated sites	- Article 21 reporting	Number in the first evaluation
Notes	<ul style="list-style-type: none"> ▪ There may be some data gaps, as parties are not obliged to share the information collected as part of their inventory. 		

E: Support cluster Article 13 (financial resources and mechanism); article 14 (capacity-building, technical assistance and technology transfer)		Source of information on the indicator	Baseline for the indicator
Article 13			
E1. Process indicator for article 13	Number of parties that have: <ul style="list-style-type: none"> ○ Contributed to the financial mechanism referred to in article 13, para. 5 ○ Received Global Environment Facility resources ○ Received SIP resources ○ Mobilized national resources for implementing the Convention within the reporting period 	- Article 21 reporting	Number in the first evaluation
E2. Process indicator for article 13	Amount of resources provided by: <ul style="list-style-type: none"> ○ Global Environment Facility ○ SIP ○ Bilateral support within the reporting period 	- Article 21 reporting - Other public sources	Number in the first evaluation
E3. Additional process indicator for article 13	Number of recommendations from the financial review reflected in the Global Environment Facility/SIP policy documents	- Information from policy documents	Zero
Article 14			
E4. Process indicator for article 14	Number of parties that have: <ul style="list-style-type: none"> ○ Cooperated in providing capacity-building and technical assistance to another party ○ Requested technical assistance ○ Received capacity-building or technical assistance ○ Promoted or facilitated technology transfer 	- Article 21 reporting - Other public sources	Number in the first evaluation
Notes	<ul style="list-style-type: none"> ▪ The cycle of review of the financial mechanism may well not align with the effectiveness evaluation cycle. ▪ As the reporting format does not request dollar values for resources provided, other public sources may need to be consulted. 		
F: Article 15 (Implementation and Compliance Committee)		Source of information on the indicator	Baseline for the indicator
F1. Process indicator	Proportion of issues that the Implementation and Compliance Committee was able to resolve, including indications of systemic issues, if any	- Implementation and Compliance Committee report, as referred to in article 21	Number in the first evaluation
Notes	<ul style="list-style-type: none"> ▪ The Conference of the Parties is to consider the terms of reference of the Implementation and Compliance Committee at its third meeting. 		

G: Article 16 (Health aspects) (The indicator for article 16 is to be read with the relevant monitoring indicators indicated in table 4)		Source of information on the indicator	Baseline for the indicator
G1. Monitoring indicator	Mercury levels in selected human populations (as defined by the monitoring arrangements)	- Existing monitoring data and activities	Number in the first evaluation
G2. Process indicator	Number of parties that have taken measures, such as fish advisories, to provide information to the public on exposure to mercury, in accordance with paragraph 1 of article 16	- Article 21 reporting	Number in the first evaluation
G3. Process indicator	Number of parties that have taken measures to protect human health, in accordance with article 16	- Article 21 reporting - Submissions to the secretariat	Number in the first evaluation
Notes	<ul style="list-style-type: none"> ▪ Mercury levels in biota are also to be considered. 		

H: Information and research cluster Article 17 (information exchange); article 18 (public information, awareness and education); article 19 (research, development and monitoring)		Source of information on the indicator	Baseline for the indicator
Article 17			
H1. Process indicator for article 17	Number of parties with designated national focal points	- Article 21 reporting	Number in the first evaluation
H2. Process indicator for article 17	Number of parties that have facilitated the exchange of information related to mercury	- Article 21 reporting	Number in the first evaluation
Article 18			
H3. Process indicator for article 18	Number of parties that have taken measures to implement article 18	- Article 21 reporting	Number in the first evaluation
H4. Process indicator for article 18	Average number of measures under paragraph 1 of article 18 that are being implemented by parties	- Derived from article 21 reporting	Number in the first evaluation
H5. Process indicator for article 18	Number of parties that have public information on mercury levels in air, humans and biota within their territory	- Article 21 reporting	Number in the first evaluation
H6. Process indicator for article 18	Number of parties undertaking risk communication relating to mercury intake through food and water consumption within their territory	- Article 21 reporting	Number in the first evaluation
Article 19			
H7. Process indicator for article 19	Number of parties that have undertaken research, development and monitoring, in accordance with paragraph 1 of article 19	- Article 21 reporting	Number in the first evaluation
H8. Process indicator for article 19	Number of parties contributing data and knowledge to integrated assessments	- Existing monitoring networks, databases, scientific data and literature	Number in the first evaluation
H9. Additional process indicator for article 19	Number of regions contributing to a regional dataset	- Existing monitoring networks, databases, scientific data and literature	Number in the first evaluation
Notes	<ul style="list-style-type: none"> ▪ Submissions to the secretariat that supplement article 21 reporting 		

I: Article 20 (implementation plans)		Source of information on the indicator	Baseline for the indicator
I1. Process indicator	Number of parties submitting implementation plans	- Secretariat report to the Conference of the Parties on implementation plan submissions	Zero
Notes	<ul style="list-style-type: none"> ▪ Parties are not obliged to prepare an implementation plan. Some parties have nevertheless found it useful to prepare such a plan and submit it to the secretariat. 		

J: Article 21 (reporting)		Source of information on the indicator	Baseline for the indicator
J1. Process indicator	Proportion of parties reporting on time	- Article 21 reporting	Percentage of the first submission on time
J2. Process indicator	Proportion of reports received on time	- Article 21 reporting	Percentage not available in the first reports
J3. Process indicator	Proportion of parties indicating that information is not available for specific questions	- Article 21 reporting	Percentage not available in the first reports
Notes	<ul style="list-style-type: none"> ▪ Parties are to report every two years. 		

K: Article 22 (effectiveness evaluation)		Source of information on indicator	Baseline for the indicator
K1. Process indicator	Evidence of implementation of recommendations from effectiveness evaluation through decisions and actions of the Conference of the Parties	- Conference of the Parties meeting report	Zero
Notes	<ul style="list-style-type: none"> ▪ This article will not be evaluated in the first evaluation. 		

Abbreviations: ASGM, artisanal and small-scale gold mining; BAT/BEP, best available techniques/best environmental practices; SIP, specific international programme to support capacity-building and technical assistance.

C. Data sources

49. The availability of sources of information for the indicators, as well as supplementary relevant and comparable scientific, environmental, technical, financial and economic information on which to base the effectiveness evaluation, is driven by several factors.

50. First, different articles of the Convention have different timelines for implementation. Some deadlines fall within the first cycle of effectiveness evaluation (2017–2023), but some do not. Moreover, even if a measure is implemented by the deadline, evidence of its impact and therefore effectiveness may not be available for some time or be directly measurable, which presents challenges in terms of attributing effect. Table 3 below gives an overview of the time-bound articles of the Minamata Convention, with their timelines.

Table 3

Minamata Convention timelines

Date	Article	Description
2018	Art. 5, para. 2, and annex B	Acetaldehyde production in which mercury or mercury compounds are used as a catalyst is to be phased out.
2020	Art. 4, para. 1, and annex A	Manufacture, import or export of various mercury-added products is no longer allowed (including batteries, switches and relays, compact and linear fluorescent lamps, high pressure mercury vapour lamps, cold cathode fluorescent lamps and external electrode fluorescent lamps for electronic displays, cosmetics, and pesticides, biocides and topical antiseptics, as well as barometers, hygrometers, manometers, thermometers and sphygmomanometers).
	Art. 5, para. 3, and annex B	In vinyl chloride monomer production, reduce the use of mercury in terms of per-unit production by 50 per cent by the year 2020 against 2010 use.
		For sodium or potassium methylate or ethylate, reduce emissions and releases in terms of per unit production by 50 per cent by 2020 compared to 2010.
2025	Art. 5, para. 2, and annex B	Chlor-alkali production is to be phased out.
2027	Art. 5, para. 3, and annex B	For sodium or potassium methylate or ethylate, reduce the use of mercury, aiming at phase-out of this use as fast as possible and within 10 years of entry into force of the Convention.
2032*	Art. 3, para. 4	Primary mercury mining that was being conducted within a party's territory at the date of entry into force of the Convention for that party is to cease 15 years after that date.
2020*	Art. 5, para. 5 (c)	Submit to the secretariat, no later than three years after the date of entry into force for the party, information on the number and types of facilities that use mercury or mercury compounds for processes listed in annex B, and the estimated annual amount of mercury or mercury compounds used in those facilities.
	Art. 7, para. 3 (b)	For a party that determines that artisanal and small-scale gold mining and processing in its territory is more than insignificant, submit a national action plan to the secretariat no later than three years after the date of entry into force for the party or three years after the party notifies the secretariat of its determination, whichever is later.
	Art. 9, para. 3	Identify relevant point source categories no later than three years after the date of entry into force for the party.
2021*	Arts. 8, para. 3, and art. 9, para. 4	Submit an implementation plan, if one has been developed, within four years of the date of entry into force for the party.
2022*	Art. 8, para. 4	For new sources, require the use of best available techniques and best environmental practices no later than five years after the date of entry into force for the party.
2023*	Art. 8, para. 7	Establish and maintain an inventory of emissions sources no later than five years after the date of entry into force for the party.
	Art. 9, para. 6	Establish and maintain an inventory of release sources no later than five years after the date of entry into force for the party.
2027*	Art. 8, para. 5	Implement control measures for existing facilities no more than 10 years after the date of entry into force for the party.
* Denotes first possible date, depending on when the Convention entered into force for that party.		

51. Second, various important identified data sets and information sources that have been produced in the past are not required under the Convention, and thus the production of similar reports in the future is not assured or governed by Convention requirements. These include Minamata Convention initial assessments, as well as the UNEP global mercury assessment report (published in 2002, 2008, 2013 and 2018⁶) and the UNEP report on global mercury supply, trade and demand (published in 2006 and 2017⁷).

52. Third, some information sources differ in production frequency. The artisanal and small-scale gold mining national action plans are due three years after the entry into force of the Convention for a party (or three years after the party notifies the secretariat that it has more than insignificant artisanal and small-scale gold mining) and progress must be reviewed every three years thereafter. The regular reports under article 21 are to be completed every two years for specified questions, with the first short reports due at the end of 2019 and the first full reports responding to all reporting requirements due at the end of 2021.

53. Last is the consideration of the availability of relevant and comparable scientific and environmental monitoring data. While mercury is one of the longest-studied chemicals, in considering the available monitoring information and available data on mercury and mercury compounds, the ad hoc technical expert group observed that not all data and matrices are suitable for direct comparison or analysis at the global level. Modelling will thus be critical to shaping a fuller understanding of the presence of mercury and its trends in the environment, as well as to attributing changes in mercury levels to the Convention measures.

54. Current mercury monitoring activities and efforts and modelling arrangements are outlined in more detail in appendix I on technical information on monitoring (UNEP/MC/COP.3/14/Add.1) and appendix III on the proposed global monitoring arrangements and draft terms of reference for the monitoring group. Table 4 gives an indicative list of monitoring indicators by media, along with the sources of information used. The monitoring indicators complement the indicators presented in table 2.

Table 4

Indicative list of monitoring indicators, by media

Overall media	Indicator	Source of information
1. Air	M1. Total gaseous mercury/gaseous elemental mercury in the ambient air	Existing/expanded monitoring activities and networks
	M2. Mercury level in precipitation	Existing/expanded monitoring activities and networks
2. Humans	M3. Mercury level in hair as a primary matrix	Epidemiological studies by parties
	M4. Mercury level in blood as an alternative	International and national biomonitoring programme Longitudinal birth cohort and cross-sectional studies
3. Biotic media	M6. Mercury levels in biotic media	Continental network
	M7. Mercury levels in biotic media	Oceanic framework
4. Water	M8. Mercury levels in sea water covering horizontal and vertical distribution	Existing/expanded monitoring activities and networks

D. Use of modelling in the effectiveness evaluation

55. Models provide for the attribution and integration of mechanisms and observations, and use that to assess projections for future source apportionment. It can therefore be said that models formalize the scientific understanding of mechanisms affecting mercury behaviour. Models provide a tool for linking and spatially/temporally extrapolating monitoring data collected globally as part of ongoing research programmes, policy activities and data provided to provide a comprehensive picture of the state of mercury pollution globally. Moreover, an integrated modelling framework is a tool for working across media, i.e., for linking releases of mercury to air, land and water to methylmercury levels in fish and wildlife, as well as exposure of human populations.

56. Models can also be useful in effectiveness evaluation for attributing changes in mercury levels to Convention measures.

57. Models for different media (air, humans, biota, water and soil) vary in their ability and state of development. For example, for air and atmosphere, many monitoring groups have developed global modelling tools that can be used to assess the impact of changes in anthropogenic mercury emissions and releases on global atmosphere concentrations, and mercury inputs to terrestrial ecosystems and the ocean. Such models have been extensively evaluated and can be applied to assess spatial gradients in atmospheric mercury concentrations and deposition, as well as temporal changes. By contrast, models for other media tend to be used in research applications.

58. Integrated modelling frameworks seek to link the various models used for different media to provide a tool for linking emissions of mercury to the atmosphere and releases to land and water to methylmercury levels in fish and wildlife, and to exposure of some fish-consuming human populations. It should be noted, however, that it is difficult to link human exposure and health outcomes due to the diversity of dietary preferences, food consumption patterns and individual variability in toxicokinetics affecting methylmercury uptake and elimination.

59. In addition to models that describe the behaviour of mercury in the environment and receptors, a variety of models and quantitative techniques can simulate socioeconomic systems to forecast where mercury is present in society and where it might eventually enter the environment. In this way, models can be used to develop scenarios that represent a baseline and different policy alternatives. Inputs to these models include commercial data (e.g., the amount of mercury in products), technological performance, economic information, energy data, demographic information, policy specifications and institutional analysis. Outputs can include mercury emissions and releases and socioeconomic parameters. Other types of models that are relevant to understanding socioeconomic systems of relevance to mercury include life cycle analysis, material flow analysis, input-output and economic models.

60. Developing and evaluating integrated models draws on expertise that bridges natural science, social science and engineering. The components for an integrated modelling framework are currently undergoing rapid development in the scientific and academic community and should be available in the near future to add to our understanding of mercury cycling and its impacts. It is expected that such models will be available by 2023 for policy-relevant analyses.

E. Scientific and technical functions

61. The Minamata effectiveness evaluation framework foresees four scientific and technical functions to be performed for the effectiveness evaluation, namely, monitoring, synthesis, modelling and attribution (when possible), and integration. These functions come into play at different levels of the framework.

62. On synthesis, this scientific and technical function entails collecting and compiling information from levels 1 and 2. This function is conducted at level 3. The function is delivered by/through the secretariat with/through partners. Besides the monitoring report mentioned above, the effectiveness evaluation framework foresees the production of the following additional four synthesis reports: the article 21 synthesis report, the emissions and releases report, the trade, supply and demand report and the waste report.

63. On monitoring, this scientific and technical function entails compiling, assessing and summarizing available monitoring data, as per the global monitoring arrangements set out in appendix III, to describe the current state of mercury concentrations and trends in the environment, biotic media and vulnerable populations, working with modelling experts as appropriate. This function is to be performed by the monitoring group, which will develop the monitoring report at level 3. The monitoring report will be submitted to the Effectiveness Evaluation Committee for its consideration and formulation of findings. The monitoring report and work of the monitoring group will also be input to an attribution report when such a report is being developed by the modelling subgroup, at level 4.

64. On attribution, this scientific and technical function entails analysing the contribution of emissions and releases covered by the Convention to overall mercury concentrations in the environment, biotic media and vulnerable populations. This function will be filled by the modelling subgroup once established. This function will be conducted at level 4 and will estimate future mercury concentrations to capture the overall impacts of mercury emissions and releases, from legacy to predicted future emissions and releases, under various scenarios, based on the reports made available in the effectiveness evaluation process, as well as available relevant socioeconomic information.

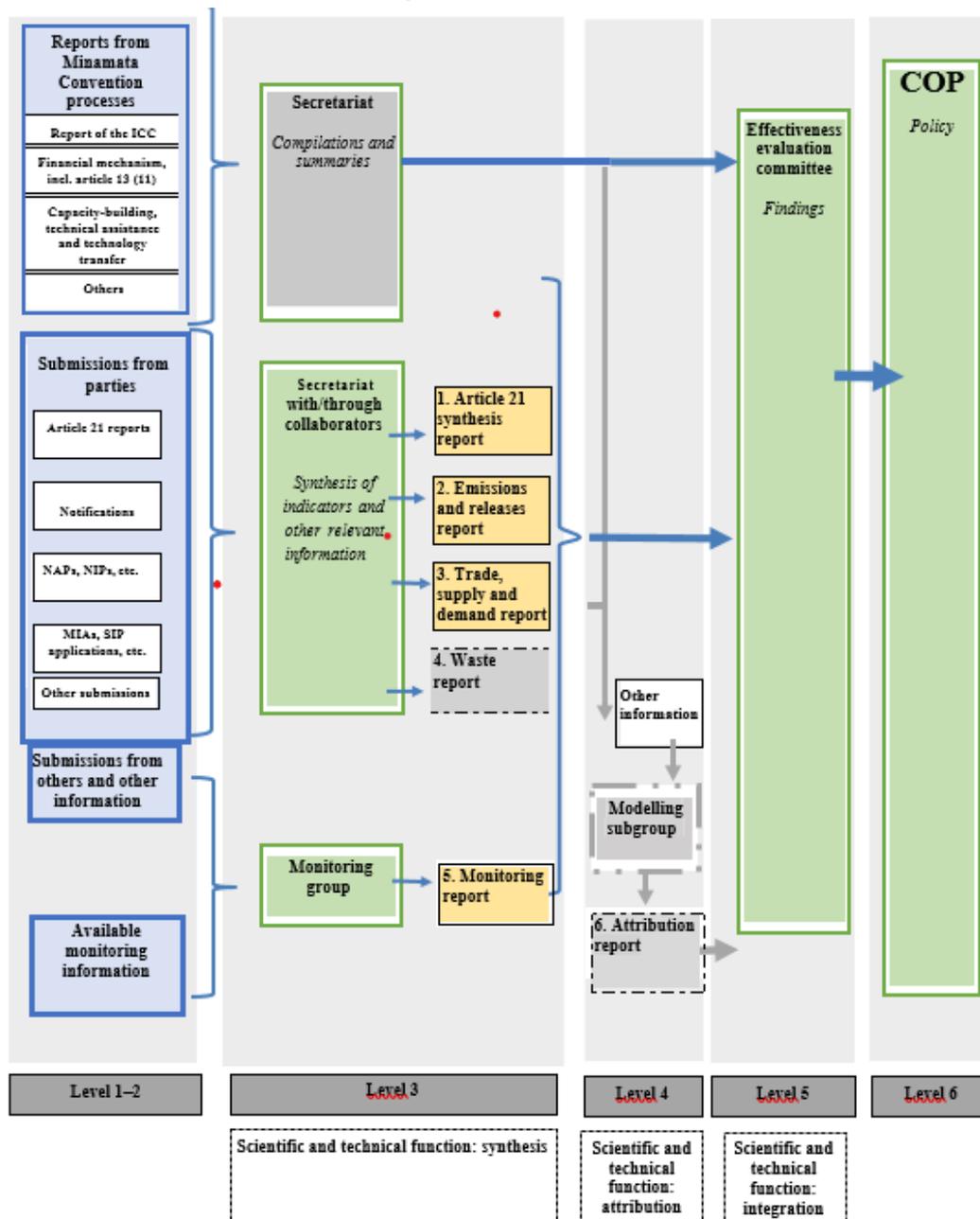
65. On integration, this scientific and technical function will occur at level 5 and involve interpreting the information and knowledge collected, compiled and synthesized (including the attribution report when available) to determine the linkages between policy action, emission reductions

and mercury levels, and to formulate findings on the effectiveness of the Convention. This function is to be delivered by the Effectiveness Evaluation Committee. The draft terms of reference for the Committee are found in appendix II. In formulating its findings, the Committee will indicate where the objective of the Convention is being met and where it is not being met.

F. Institutional arrangements for the effectiveness evaluation

66. To implement the effectiveness evaluation process described thus far, the framework identifies the various entities that deliver inputs, and identifies tasks such as compiling, summarizing and integrating data and knowledge, and performing relevant scientific and technical analyses at the various levels. Figure 2 depicts the data inputs, the analysis outputs and the flow of information and knowledge between the entities. The entities identified are: the parties to the Convention, the secretariat, secretariat collaboration partners (in the form of institutional collaboration or contracted collaboration), the monitoring group (see appendix III), the possible modelling subgroup (see appendix IV), the Effectiveness Evaluation Committee (see appendix II) and the Conference of the Parties.

Figure 2
Framework institutional arrangements



Abbreviations: COP, Conference of the Parties; ICC, Implementation and Compliance Committee; MIA, Minamata Convention initial assessment; NAP, national action plan; NIP, national implementation plan; SIP, specific international programme to support capacity-building and technical assistance.

G. Secretariat of the Minamata Convention

67. The secretariat will play a role in collecting, compiling, summarizing and synthesizing the available data. The secretariat already has a role, prescribed by the Convention, to act as the mechanism through which parties submit reports under article 21, which in turn will contain references to progress reports on the national action plans under article 7, inventories under articles 8 and 9 and voluntary implementation plans under article 20. The secretariat may, as appropriate, be assisted by collaboration partners and experts in conducting literature reviews, producing datasets for further analysis or organizing synthesis and peer reviews.

68. Drawing on past experiences at UNEP in collaborating with experts on the production of scientific and technical report, the secretariat of the Minamata Convention will be responsible for facilitating the production of synthesis reports, which may be delivered through institutional collaboration or contracted expertise.¹³ It is to be noted that the UNEP Chemicals and Health Branch led and/or facilitated the production of the Global Mercury Assessment 2018 report, the 2017 report on global mercury supply, trade and demand and the 2018 Global Mercury Waste Assessment report, as well as earlier iterations of some of those reports.

69. The secretariat will also compile summaries and synthesis reports resulting from other processes mandated by the Convention, such as reports from the Implementation and Compliance Committee under article 15, reports from bodies implementing the financial mechanism, reports on the review of the finance mechanism pursuant to article 13, paragraph 11 (which will draw, inter alia, on reports of the Global Environment Facility and the specific international programme to support capacity-building and technical assistance) and reports on capacity-building, technical assistance and technology transfer under article 14.

H. Conference of the Parties

70. The Conference of the Parties, at level 6 of the framework, has the ultimate responsibility for evaluating the effectiveness of the Convention, based on the findings of the Effectiveness Evaluation Committee. Recommendations on the effectiveness of the Convention are fully within the purview of the Conference of the Parties. The Conference of the Parties may also choose to mandate changes to the process for future effectiveness evaluation cycles.

I. Schedule and timetable

71. Paragraph 1 of article 22 on effectiveness evaluation indicates that the Conference of the Parties will evaluate the effectiveness of the Convention no later than six years after the date of entry into force of the Convention and periodically thereafter, at intervals to be decided by it. As the Convention entered into force on 16 August 2017, the framework prepared by the ad hoc technical expert group allows the outcome of the first cycle of evaluation to be submitted in 2023, the year of the fifth meeting of the Conference of the Parties. This, however, requires that the Conference of the Parties adopt the framework at its third meeting.

72. It should be noted that taking into account the reporting cycles agreed for the Convention, the two-year cycle under article 21 on reporting requires the first short reports in December 2019 and the first four-year cycle of reports in December 2021. Assuming that this information comes together and given the regular reports to the Conference of the Parties from the Implementation and Compliance Committee as per article 15, on financial resources and the financial mechanism as per article 13 and on capacity-building, technical assistance and technology transfer as per article 14, as well as monitoring data available following the implementation of the global monitoring arrangement proposed in appendix III, the deadline for comparable information for the first cycle of evaluation is recommended to be set as 2021, at which stage all parties will have submitted a national short report (2019) and a national long report (2021) from which pertinent information can be extracted for the first effectiveness evaluation cycle.

73. The fourth meeting of the Conference of the Parties is to convene in 2021, and it is proposed that the Effectiveness Evaluation Committee be established at that meeting. This would allow the Committee to use 2022 and 2023 for its review, analysis and evaluation of the proposed reports, so as

¹³ On the production of reports, a proposal was also expressed to engage in bidding processes to identify collaborating partners. This would be based on a call for proposals that includes the approach and methodology for the identified task, the structure needed to execute the task and the costs associated with delivering the task. Any bidding process to be followed by the secretariat would be guided by United Nations procurement rules and processes. Full information on such a process would be reported to the Conference of the Parties.

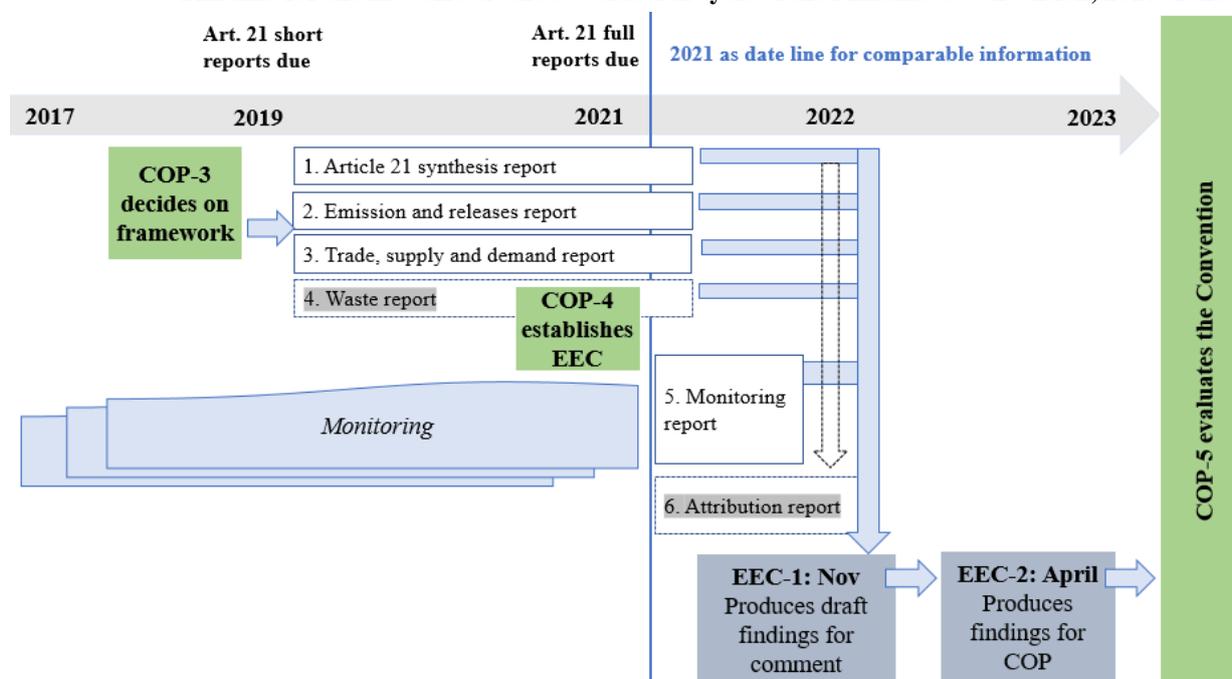
to formulate its findings for presentation to the Conference of the Parties at its fifth meeting, which is to take place in 2023.

74. It is proposed that the Effectiveness Evaluation Committee meet twice, first in November 2022 and then in April 2023, to formulate its findings. It is assumed that at its first meeting it would produce draft findings for possible comment and at its second meeting it would finalize the findings for presentation to the Conference of the Parties.

75. The timeline for the first effectiveness evaluation cycle is set out in figure 3.

Figure 3

Timeline for the first effectiveness evaluation cycle of the Minamata Convention, 2017–2023



Abbreviations: COP, Conference of the Parties; EEC, Effectiveness Evaluation Committee.

76. Following the first effectiveness evaluation cycle (2017–2023), the Conference of the Parties is to review the Convention periodically at intervals to be decided by it, as per article 22, paragraph 1. The Conference of the Parties may wish to take into consideration the following parameters in determining the periodicity of the effectiveness evaluation cycle:

- (a) The availability of the short reports for the next cycle in 2023, 2027 and 2031 and of the long reports in 2025, 2029 and 2033;
- (b) The timing of the meetings of the Conference of the Parties, in 2025 (sixth meeting), 2027 (seventh meeting), 2029 (eighth meeting), 2031 (ninth meeting) and 2033 (tenth meeting);
- (c) The phase-out timelines set by the Convention (see table 3);
- (d) The concurrent timelines and expected outcomes of the climate and sustainable development processes set for 2030.

77. As such, the next effectiveness evaluation cycle could again be six years (to report at the eighth meeting of the Conference of the Parties, in 2029), to capture the dynamics of the Convention. It could also be extended to eight years (to report at the ninth meeting of the Conference of the Parties, in 2031) or ten years (to report at the tenth meeting of the Conference of the Parties, in 2033). With the longer periods, however, additional external factors would need to be taken into account when performing the attribution function.

IV. Issues for further consideration

78. The comments on the draft report and input received during the comment period from 1 August to 5 September 2019 provided the ad hoc technical expert group with much valuable information and guidance from parties and from a stakeholder for the completion of its report to the Conference of the Parties on the proposed framework for the evaluation of the effectiveness of the Convention. While almost all comments could be addressed and/or incorporated into the report, there

remained areas where views differed. Those areas are outlined below for further consideration by the Conference of the Parties.

79. There are different views on whether it is possible to produce the attribution report (referred to as the integrated assessment report in the draft report circulated for comment). Some hold that the attribution report is scientifically imperative for the effectiveness evaluation, while others consider that the tools and models required to produce such a report are not yet proven reliable and robust and that the report should be removed from the first effectiveness evaluation cycle, but could be included in a future refinement of the framework, for future cycles. Given these comments, the attribution report continues to be listed and described in the present report but such instances are footnoted and/or highlighted in grey to indicate that there are differing views on the matter.

80. Besides valuable comments and edits to sharpen the proposed indicators, several other items were mentioned regarding indicators:

81. There were different views on the approach to identifying the indicators and the subsequent proposed list. Identifying indicators article by article and clustering related articles was generally regarded as useful and valuable, but some took the view that this might mean that indicators did not need to be identified for each article.

82. Furthermore, some were of the view that indicators should only be identified for legal obligations, while others said that indicators were needed for both legal and voluntary obligations.

83. A view was also expressed on the interpretability of the findings coming from indicators, hence the suggestion that only indicators where the direction of association is linked with emissions and releases be selected. While some saw causality and interpretability as critical, others held that, for the overall integrative perspective on the effectiveness of the Convention, it is imperative to capture the information coming from other indicators.

84. There were comments to the effect that the proposed indicator for article 22 (K1) should be deleted, along with a selection of other proposed indicators. In the current report, K1 has been highlighted in grey to indicate the differing views. The first cycle will present an opportunity to resolve other divergences on specific indicators.

85. There were different views on whether a waste report is needed. Some people were of the view that a report focusing on waste management practices would not provide information on the effectiveness of the Convention; the proposed reports on trade, supply and demand could be expected to provide information on the reuse of waste mercury for allowed uses and would therefore be a more useful lens. Therefore, their request that the waste report be deleted from the list of reports to be prepared in the first effectiveness evaluation cycle. The opposing view is that it is critical for the Effectiveness Evaluation Committee to have independent background information on available technical and policy options for waste management and recycling, so as to gain perspective on the article 21 reports on those matters. In the light of these differing views, the waste report remains part of the proposed framework, but the instances where it is mentioned are highlighted in grey.

86. A view was also expressed that the collection of monitoring data should not use the resources of the Convention.

87. There were also different views expressed regarding the matrices for human biomonitoring: one view held that blood sampling should be limited to cord blood, as this is non-invasive and can be used for pre-natal exposure assessment, while the other held that cord blood might not be sufficient for human exposure assessment and that blood sampled from adults should also be used, given that these groups represent different vulnerable populations.

88. Lastly, while the report indicates that the production of the synthesis reports is to be facilitated by the secretariat and produced with/through collaborating partners, it does not list potential collaborating partners. To inform the consideration of possible partners for the production of the proposed emissions and releases report, trade, supply and demand report and waste report, it may be useful for the Conference of the Parties to recall the collaborating partners (both institutional and contracted) that worked with the UNEP Chemicals and Health Branch to produce the report *Global Mercury Assessment 2018*,⁶ the 2017 report *Global Mercury: Supply, Trade and Demand*⁷ and the 2018 report *Global Mercury Waste Assessment: Review of Current National Measures*.⁸

Appendix I

Technical information on monitoring

[The text of appendix I is set out in document UNEP/MC/COP.3/14/Add.1.]

Appendix II

Draft terms of reference for the Effectiveness Evaluation Committee

A. Mandate

1. The Effectiveness Evaluation Committee (hereinafter, the “Committee”) will carry out tasks related to level 5 of the proposed methodology for the effectiveness evaluation.

B. Membership

2. The members of the Committee will be appointed on the basis of equitable geographical distribution, taking into account the need for gender balance and various types of expertise.

3. The Committee will consist of 12 experts, as follows:

(a) Two experts nominated by each of the five United Nations regions and confirmed by the Conference of the Parties;

(b) One expert representing the global monitoring arrangements;

(c) One expert representing the Implementation and Compliance Committee.¹⁴

4. The experts nominated by the regions and confirmed by the Conference of the Parties will have expertise in evaluation, reporting and national implementation, or other expertise relevant to the evaluation.

5. The expert representing the global monitoring arrangements will be selected from among the members of the monitoring group.

6. The expert representing the Implementation and Compliance Committee will be selected by and from among the members of that committee.

7. Members of the Committee will serve objectively and provide their expertise in a neutral and impartial manner, stand to the evidence presented to the Committee and act in the best interests of the Convention.

8. The terms of office of the members will coincide with the effectiveness evaluation cycle determined by the Conference of the Parties.

9. If a member is unable to complete his or her term of office, the region nominating that member will nominate another person to complete the term.

C. Invited experts and observers

10. The secretariat will invite two internationally recognized experts in effectiveness evaluation as observers, with due consideration for the available expertise.

11. The Committee will invite up to five experts from civil society, indigenous organizations, intergovernmental organizations, industry and the UNEP Global Mercury Partnership as observers. The participation of observers will be balanced among the above-mentioned groups and by gender.

12. The Committee may allow additional observers within reasonable limits.

13. Observers are expected to provide their technical expertise to help the Committee members interpret the information provided.

D. Officers

14. The Committee will elect a chair and a vice-chair from among its members.

E. Administrative and procedural matters

15. The Committee will apply the rules of procedure of the Conference of the Parties, mutatis mutandis, unless otherwise provided in the present terms of reference.

16. The Committee may establish such arrangements as are necessary to facilitate its work, in line with the present terms of reference.

¹⁴ Grey highlighting has been used throughout the present appendix to indicate a difference in views among commentators with respect to the inclusion of the highlighted text.

17. The Committee members will seek to reach agreement by consensus. Should the members fail to reach consensus, the range of their views will be reflected in the relevant report to be submitted to the Conference of the Parties.

F. Secretariat

18. The secretariat will provide administrative, logistical, programmatic and substantive support for the meetings and work of the Committee.

G. Meetings

19. The Committee will hold two face-to-face meetings to review the information available for each evaluation cycle and develop a report of its findings to the Conference of the Parties, subject to the availability of funds and work requirements. The frequency of Committee meetings may be amended as necessary based on the decisions of the Conference of the Parties.

20. Documents to be transmitted to the Conference of the Parties will be finalized by the Committee at least four months before the meeting of the Conference of the Parties.

H. Language of meetings

21. The working language of the Committee will be English.

I. Budget

22. Financial support for travel and daily subsistence allowance should, subject to approval by the Conference of the Parties, be made available to Committee members and invited experts and observers for participation in meetings of the Committee in accordance with United Nations rules and practice.

Appendix III

Proposed global monitoring arrangements and draft terms of reference for the monitoring group

I. Introduction

1. The present appendix describes the global monitoring arrangements proposed to support the effectiveness evaluation of the Minamata Convention. The proposed arrangements build on existing monitoring activities, knowledge and expertise.
2. The present appendix also includes the proposed terms of reference for the monitoring group that would carry out the monitoring-related tasks identified in levels 1, 2, and 3 of the methodology for the effectiveness evaluation and prepare a global monitoring report.
3. The key elements of the proposed global monitoring arrangements are:
 - (a) Mercury data and their availability from human health and environmental monitoring programmes that achieve global coverage and contain at least core representative data from all regions;
 - (b) Tools supporting data harmonization, such as standard operating procedures and a monitoring guidance document;
 - (c) Expertise to gather and consolidate harmonized information that ensures comparability and consistency in mercury monitoring data over the long term;
 - (d) Modelling capabilities;
 - (e) A periodic global monitoring report on mercury levels and trends.
4. Technical information on monitoring (including the proposal for three core media) is presented in appendix I to the report of the ad hoc technical expert group (UNEP/MC/COP.3/14/Add.1). More detailed information on monitoring, additional background information and further information on existing modelling capabilities is contained in document UNEP/MC/COP.3/INF/15.
5. Regarding mercury data availability, a review presented in appendix I shows that even though mercury has one of the largest available collective data sets of recognized environmental contaminants, significant data gaps remain. These gaps could be easily filled by parties through the provision of support for related scientific activities and the use of already developed materials.
6. Assuming that existing mercury monitoring activities continue in a harmonized manner and are supplemented by efforts to fill geographical gaps, data on levels of mercury and mercury compounds in air, biotic media and vulnerable populations should be available or obtainable and comparable on a global basis.

II. Tools supporting data harmonization

7. It is prudent to have tools that support data harmonization so as to ensure comparability. Such tools include standard operating procedures, guidance on global monitoring of mercury that is periodically updated as new information and technologies become available, and intercalibration studies.
8. The development of guidance on global monitoring of mercury will be imperative to ensure and maintain harmonized and comparable information on mercury levels in the environment. While the development of such guidance was included in the mandate of the ad hoc technical expert group, this is being postponed until the Conference of the Parties decides on monitoring arrangements, after which the guidance can be swiftly prepared based on core matrices and available knowledge. A draft structure for the guidance has been developed and is contained in document UNEP/MC/COP.3/INF/15.

III. The development of a periodic global monitoring report on mercury

9. The monitoring group will prepare a global monitoring report on mercury for each effectiveness evaluation cycle.

10. The preparation of the monitoring report will require extensive expertise to compile, assess and summarize monitoring data.
11. The monitoring report will be organized by media and show the available monitoring data and trends in mercury levels in the environment, biotic media and vulnerable populations. Where available, models will be used to predict future trend developments.
12. The first monitoring report on the state of mercury in the environment will be available for the first meeting of the Effectiveness Evaluation Committee.
13. The ad hoc expert group also expects information from the monitoring reports to be used for the contextualization of information in a multi-compartment model to capture the socioeconomic scenario, the baselines and policy alternatives. This task could be performed by a modelling subgroup.

IV. Draft terms of reference for the monitoring group

A. Mandate

14. The monitoring group (hereinafter, the “group”) will carry out tasks related to monitoring as identified in levels 1, 2, and 3 of the proposed methodology for the effectiveness evaluation.
15. The group is tasked with the development of the monitoring report, which gathers, analyses and synthesizes mercury monitoring data on changes in mercury concentrations over time and draws conclusions thereon for the consideration of the Effectiveness Evaluation Committee, which in turn develops findings for the consideration of the Conference of the Parties.
16. The monitoring report will include a section on the identification of gaps in information and knowledge, if relevant, as well as proposals to bridge such gaps in future cycles.
17. The group will also develop a guidance document on monitoring so as to ensure and maintain harmonized, comparable information on mercury levels in the environment. A draft structure for this guidance has been developed and is contained in document UNEP/MC/COP.3/INF/15.
18. The group will start its work immediately following the third meeting of the Conference of the Parties and will produce the monitoring report for consideration by the Effectiveness Evaluation Committee at its first meeting, in 2022.

B. Membership

19. The members of the group will be appointed based on equitable geographical distribution, taking into account the need for gender balance and different types of expertise.
20. Each of the five United Nations regions will nominate two experts on monitoring/modelling (experts on mercury monitoring in core media, experts participating in existing monitoring networks on mercury, experts on modelling environmental trends) to sit as members.
21. The secretariat will invite two internationally recognized experts with expertise in modelling environmental trends/multi-compartment models to sit as members.
22. The group may invite the participation of up to five experts from civil society, indigenous communities, intergovernmental organizations, research and academia, the Global Mercury Partnership and existing monitoring networks to sit as observers, with a view to providing up-to-date information, scientific knowledge and other relevant expertise that assists the group in producing the monitoring report. In addition, the group may call on additional expertise, as required.
23. The overall expertise of the group will include at least one of each type of expertise/stakeholder group.
24. The terms of office of the members will coincide with the effectiveness evaluation cycle determined by the Conference of the Parties. To provide continuity, the Conference of the Parties may renew the terms of office of the members for subsequent evaluations. If a member is unable to complete his or her term of office, the region or stakeholder group nominating that member will nominate another person to complete the term.

C. Officers

25. The group will elect two co-chairs to facilitate its work and meetings.

D. Secretariat

26. The secretariat will provide administrative, logistical, programmatic and substantive support for the meetings and work of the group.

E. Meetings

27. The group will meet face-to-face at least three times during an effectiveness evaluation cycle to coordinate monitoring activities on mercury and produce the monitoring report on the state of mercury in the environment for the Effectiveness Evaluation Committee.

F. Language

28. English will be the working language of the group.

Appendix IV

Description of the reports to be prepared for the Effectiveness Evaluation Committee

1. The framework provides for the preparation of five to six reports for the use of the Effectiveness Evaluation Committee in its consideration of the four policy questions. Five synthesis reports are to be prepared as described for levels 1 to 3 to respond to the first three policy questions. The sixth report, on attribution, to respond to policy question 4 is foreseen for level 4, for when such information is available and ready.¹⁵
2. The reports are to be produced using the information provided as outlined in article 22, paragraph 3 (a) to (d), and as presented schematically in figure 1 of the present report showing the information and analysis flow.

Synthesis reports

3. The content to be developed under the five synthesis reports is set out below, as are the tasks that need to be completed and the expertise required:

The article 21 synthesis report will gather, analyse and synthesize the relevant information from reporting by parties in accordance with articles 3, 5, 7, 8 and 9.

The emissions and releases report will gather, analyse and synthesize relevant information on emission and release inventories from relevant sources, as specified in articles 8 and 9, as well as information on the measures taken by parties to control mercury emissions and releases, and relevant changes in emissions and releases. The expertise required for this task includes expertise in emission/release inventories, developing or implementing measures to control mercury emissions and releases from relevant sources, including best available techniques and best environmental practices, modelling and inventories on temporal and spatial trends and variability.

The trade, supply and demand report is to gather, analyse and synthesize relevant information on mercury flows and social stocks, trends in mercury trade, supply and demand, and regulatory frameworks and implementation. This task requires expertise in trade analytics, sectoral analysis, artisanal and small-scale gold mining and the use of mercury in products and processes, along with changes in and alternatives to that use.

The waste report is to gather, analyse and synthesize relevant information on mercury waste flows and stocks, mercury waste management practices and recycling, and regulatory frameworks and implementation, as well as gaps. The expertise required for this task includes expertise in inter-industry relation analysis, waste management policy and practices, and waste disposal engineering.

The monitoring report is described in appendix III on the proposed global monitoring arrangements and draft terms of reference for the monitoring group.

Attribution report

4. Based on the synthesis reports and other information, linkages can be made between policy actions, emission reductions and mercury levels, using available data sources, modelling techniques and analytical tools drawn from natural and social sciences. In time, this can be done in an attribution report produced by a modelling subgroup. The modelling subgroup is to be composed of five experts with experience in multi-compartment modelling techniques, mercury cycling in the environment and mercury trends and uses. While much of the work of such a subgroup could be done remotely, one meeting is envisaged to draft the attribution report.
5. It is to be noted that the attribution function will evolve as understanding of mercury and modelling improves over time.
6. Once available, the attribution report could be expected to contain:

¹⁵ Grey highlighting has been used throughout the present appendix to indicate a difference in views among commentators with respect to the inclusion of the highlighted text.

- (a) An examination of time lags between actions and the outcomes observed during the subsequent evaluations;
- (b) An examination of the baseline scenario, which draws on a hypothetical “business as usual” scenario representing the period prior to the implementation of the Convention;
- (c) An assessment of the four policy questions, which could go as far as forecasting based on appropriate extrapolation;
- (d) A comprehensive analysis of the interaction between different indicators to identify important synergies and trade-offs.

7. The chapters of an attribution report could address:

- (a) Synergies and trade-offs between indicators, with a view to improving implementation efficiency;
- (b) Time lags between actions and outcomes;
- (c) Conclusions;
- (d) An annex containing a results “dashboard” that provides an overview of the progress made with respect to the indicators in the effectiveness evaluation framework.
