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Item 4 of the provisional agenda*

**Review and assessment of options for enhanced voluntary
measures and new or existing international legal instruments**

Study on options for global control of mercury

1. The Governing Council of the United Nations Environment Programme (UNEP), in its decision 24/3 IV on chemicals management, established “an ad hoc open-ended working group of Governments, regional economic integration organizations and stakeholder representatives to review and assess options for enhanced voluntary measures and new or existing international legal instruments” for addressing the global challenges presented by mercury.
2. Decision 24/3 IV provides that the ad hoc open-ended working group will be guided by the following priorities:
 - “(a) To reduce atmospheric mercury emissions from human sources;
 - (b) To find environmentally sound solutions for the management of waste containing mercury and mercury compounds;
 - (c) To reduce global mercury demand related to use in products and production processes;
 - (d) To reduce the global mercury supply, including considering curbing primary mining and taking into account a hierarchy of sources;
 - (e) To find environmentally sound storage solutions for mercury;
 - (f) To address, considering the results of the analysis referred to in paragraph 24 (d) [of the decision], the remediation of existing contaminated sites affecting public and environmental health;
 - (g) To increase knowledge on areas such as inventories, human and environmental exposure, environmental monitoring and socio-economic impacts.”

* UNEP(DTIE)/Hg/OEWG.1/1.

3. The decision further provides that for each of the above priorities the working group is to examine “the range of available response measures and strategies”; the “feasibility and effectiveness of voluntary and legally binding approaches”; “implementation options”; and “costs and benefits of response measures and strategies.”

4. Additionally, the working group is to consider, for each response measure and strategy, “the respective capacities and capabilities of developed and developing countries and countries with economies in transition” and “the need for capacity-building, technical assistance, technology transfer and suitable sources of finance”.

5. Decision 24/3 IV also “requests the Executive Director to compile other available relevant information for consideration by the ad hoc open-ended working group”. In accordance with the decision and to facilitate the work of the working group, the Executive Director has prepared a report entitled “Study on options for global control of mercury”, which is set out in the annex to the present note. It has not been formally edited by the secretariat.

6. The open-ended working group may wish:

- (a) To consider the report contained in the annex to the present note, and in particular whether it adequately covers each of the available options with respect to each priority;
- (b) To decide whether additional information on any option is required for further consideration;
- (c) To encourage Governments to submit by a date to be agreed any additional information required for further consideration of the options presented in the annexed report;
- (d) To agree, where one option appears the most suitable to manage a particular priority areas, to pursue that particular option;
- (e) To recommend any further action by the secretariat to produce further reviews or additional information for consideration by the open-ended working group at its second meeting.

Annex

Analysis of Possible Options to Address the Global Challenges to Reduce Risks from Releases of Mercury

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20 August 2007

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EXECUTIVE SUMMARY

1. Introduction

In its Decision 24/3 IV, the UNEP Governing Council established an ad hoc open-ended working group (OEWG) to review and assess options for enhanced voluntary measures and new or existing international legal instruments that could be used to address the global challenges posed by mercury. This Analysis provides information to the OEWG to assist it in that examination.

After the Introduction, the Analysis contains three substantive Parts. Part 2 provides general information and considerations related to the feasibility and effectiveness of voluntary and legally binding approaches for dealing with global environmental and sustainable development challenges. The Part includes criteria that the OEWG may wish to apply in judging the feasibility and effectiveness of international options for mercury. Part 3, the core part of the Analysis, identifies and discusses implementation options for enhanced voluntary measures and new or existing international legal instruments that could be pursued to advance long-term international action on mercury. Part 4 contains a series of tables listing strategic objectives and available response measures that may contribute to achieving each of the seven global mercury priorities defined by the Governing Council in Decision 24/3 IV.

2. Feasibility and Effectiveness of Voluntary and Legally Binding Approaches

2.1. General Considerations. The preference to address a particular international environmental problem with a voluntary or legally binding approach may be affected by many considerations. States may sometimes prefer voluntary approaches because they are unwilling to limit their options through legally binding commitments. Voluntary political commitments may allow for greater experimentation, adaptation and flexibility, because they are easier to change than legally binding commitments, which typically require a formal amendment process. That said, a variety of approaches have been used in binding international environmental agreements to provide flexibility in light of changing scientific knowledge or other factors. States may be wary of entering into binding legal obligations if the seriousness of the risks posed or the costs of compliance are uncertain. When negotiating a policy instrument, they may be strategic in balancing the ambitiousness of a commitment against its enforceability.

Several factors tend to make it more likely that legally binding commitments may be implemented and complied with to a greater extent than will voluntary ones. When the international community concludes a legally binding instrument with meaningful commitments, it makes a clear statement that it views the problem being addressed as serious and the commitments as credible. A voluntary political commitment conveys these messages less clearly. The impact of an allegation that a State has violated a legally binding obligation—and thus has acted unlawfully—is likely to be greater than an otherwise identical allegation that the State has failed to fulfill a voluntary political commitment. Because legally binding international commitments are regarded as “law,” their implementation by States may be less variable over time than may be the case for voluntary political commitments. The domestic process of ratifying and adopting legislation for a legally binding international instrument may also increase the likelihood that a State will implement and comply with it. Similarly, at the international level, the higher profile and stakes of a legally binding instrument can increase the likelihood that all relevant countries, intergovernmental organizations (IGOs), civil society organizations, and the private sector will participate in, or observe, the development of the instrument. Legally binding instruments are also more likely to

create and sustain the international institutional support that has typically been necessary in dealing with international environmental problems.

The costs of negotiating and finalizing a multilateral agreement will be a function of the complexity of the issues and the extent to which the negotiations foster inclusive participation. Generally speaking, less time and resources will be needed to negotiate an agreement in which there is a high level of certainty regarding the source, nature, and severity of risk and the need for international action, and which does not contain novel or complicated implementation and compliance mechanisms. Because the expectations of overall implementation and compliance may be lower in voluntary approaches, the implementation costs for individual countries may also be lower. However, legally binding approaches may more effectively lead to an economic “level playing field” that can discourage “free riding,” stimulate innovation, and foster a faster global transition to alternative processes and techniques. Regardless whether an agreement is voluntary or legally binding, its effectiveness can be closely tied to the availability of financial and technical assistance to aid developing countries in its implementation.

2.2. Criteria for Evaluating International Approaches. The Analysis identifies criteria that the ad hoc OEWG may wish to use in evaluating the potential feasibility and effectiveness of the voluntary and legally binding approaches discussed in Part 3.

Feasibility criteria. The feasibility of international approaches is determined, fundamentally, by political considerations reflecting national, regional, and international political dynamics. These political considerations may be shaped by several factors:

- State of knowledge about a threat
- Need for global action
- Costs
- Availability of less-polluting and alternative technologies
- Legal feasibility.

Effectiveness criteria. An international regime’s effectiveness is measured by its success in achieving its objectives. The objective articulated in Governing Council Decision 24/3 IV is to reduce risks to human health and the environment from mercury pollution. Among the criteria that the OEWG may wish to consider when evaluating potential effectiveness are:

- Ambitiousness of commitments
- Scope of coverage
- Clarity and precision of commitments
- Achievability of commitments
- Participation by States and other stakeholders
- Compliance
- Transparency
- Financial and technical support
- Responsiveness to changed circumstances
- Timeliness.

3. Implementation Options for Enhanced Voluntary Measures and New or Existing International Legal Instruments

Part 3, the core of the Analysis, identifies and discusses implementation options for voluntary and legally binding approaches that could be used to further long-term international action on mercury.

Each identified option begins with a description and background information that includes, where applicable, relevant precedents or analogous examples from international practice, especially multilateral environmental agreements and understandings that deal with chemicals and wastes. Next is a short discussion of how the option might address global mercury priorities. After that, some of the resource considerations related to the option are identified, such as technical and financial assistance for developing countries, the relationship the option might have to other agreements and approaches within the chemicals and wastes cluster, and resources that may be needed to develop and administer the option at the international level. Finally, each option includes a summary of some of the procedures that may need to be undertaken to initiate it. It is important to bear in mind that the decision to develop and adopt an option under an existing Convention would be up to that Convention's Conference of the Parties, not the UNEP Governing Council.

Voluntary and legally binding instruments and approaches may often be adopted or implemented in tandem or in multiple combinations. Many of the options discussed in Part 3 would, if implemented, address different global mercury priorities, different aspects of the same priorities, or the same priorities, but to different degrees of depth. Thus, where an option does not have the potential to address comprehensively all of the global mercury priorities, it may be necessary or advisable to consider complementing the option with one or more other options.

3.1. Options for Enhanced Voluntary Measures

Because Decision 24/3 IV commits to increased efforts to address the *global* challenges of reducing risks from mercury releases, the section focuses on options for voluntary measures that could be taken at the global level, while recognizing that implementation of such measures may occur at the international, national, regional, or local levels, and may involve partnership activities. In respect to partnerships, the Analysis avoids presupposing the conclusions or recommendations of the partners and other stakeholders who are developing an overarching framework for the Global Mercury Partnership Programme, as requested by the Governing Council in Paragraph 27 of Decision 24/3 IV. The Analysis identifies public-private partnerships and the UNEP Mercury Partnership Programme as important components of a strategic approach towards technology transfer and assistance to address mercury. Additionally, the Analysis describes partnerships as a valuable implementation tool that can be used under any global approach to address mercury, whether voluntary or legally binding. Options for enhanced voluntary measures include:

3.1.1. High-level mercury declaration and plan of implementation. A global, high-level mercury declaration and plan of implementation could raise awareness among Governments and civil society of the challenges posed by mercury; strengthen the political will to address those challenges; and establish mechanisms and processes to facilitate coordinated, comprehensive global efforts on mercury among key stakeholders. The declaration and plan of implementation could be patterned after the three core texts of the Strategic Approach to International Chemicals Management (SAICM), or after another form, such as the Non-legally Binding Instrument on All Types of Forests. Implementation of the declaration and plan of implementation could be undertaken as part of the SAICM, the UNEP Mercury Programme, or elsewhere within UNEP.

3.1.2. Mercury code of conduct. Governments could develop a non-legally binding code of conduct on mercury to establish recommended practices for addressing many of the global mercury priorities. A mercury code could be designed for use within the context of national legislation, and could also serve as a standard for corporate practice in jurisdictions where relevant national legislation may not exist. Alternatively, or in tandem with action by Governments, the private sector could broaden its development and implementation of voluntary, industry-led codes of conduct relevant to mercury, so that these codes covered most, or even all, anthropogenic sources of mercury.

3.1.3. International action through technology transfer and assistance, including partnerships. A strategic approach towards technology transfer and assistance to address mercury could help identify specific needs, available resources and gaps, and could help coordinate and prioritize the provision of such assistance to enhance its effectiveness. Such an approach could draw upon activities such as: public-private partnerships, including through the ongoing effort to strengthen the UNEP Mercury Partnerships Programme; enhanced implementation of the Bali Strategic Plan for Technology Support and Capacity-building, specifically in respect to mercury; a strategic partnership on mercury between UNEP, the United Nations Development Programme (UNDP), and the Global Environment Facility (GEF); and enhanced GEF support for technology transfer and assistance projects related to mercury during the next GEF replenishment (GEF-5).

3.1.4. Global eco-labeling and certification programs. Governments, IGOs, NGOs, and the private sector could collaborate to establish or expand the use of eco-labeling and certification to discourage the production, use, and emissions of mercury in products and production processes.

3.2. Options that May Be Taken under the Current Provisions of Existing International Legal Instruments

This section identifies and describes options under binding international legal instruments that could be implemented using existing provisions of the instruments, or that could be adopted using existing provisions for managing additional substances under the instruments. All of the options would utilize existing procedures and mechanisms under the respective treaties, and thus would not require the creation of any new international instruments or processes that are not already authorized under the treaties. However, none of these options is likely to achieve comprehensive coverage of all seven of the global mercury priorities identified in Decision 24/3 IV. Rather, they might comprise individual components of an overall global mercury strategy. They include:

3.2.1. Mercury wastes under the Basel Convention. UNEP Chemicals and the secretariat of the Basel Convention are undertaking a work plan to develop technical mercury waste guidelines and to implement pilot projects on environmentally sound management of mercury wastes in selected countries. Governments may enhance the potential effectiveness of these technical guidelines by ensuring that developing countries receive sufficient technical and financial assistance to support their implementation and that all countries devote adequate resources to domestic implementation of the guidelines.

3.2.2. International trade in mercury under the Rotterdam Convention. Parties to the Rotterdam Convention could take steps to add all uses of mercury to the Convention, so that international trade in mercury and products containing mercury would be subject to the Convention's prior informed consent procedure. The addition of industrial and other uses of mercury to the PIC list could have a positive, albeit incremental, effect toward achieving global mercury priorities, especially those related to international trade, namely, to reduce global mercury demand related to use in products and production processes and, to a lesser extent, to reduce the global mercury supply.

3.2.3. Methylmercury under the Stockholm POPs Convention. Parties to the Stockholm Convention could agree to list methylmercury in the Convention's Annex C for unintentionally produced POPs. Based on the text of the Convention's Article 5, and on deliberations being undertaken by the Persistent Organic Pollutants Review Committee (POPRC), only unintentional, anthropogenic releases of methylmercury (not releases of elemental mercury or other forms) would likely qualify for listing in Annex C. Such releases could include those from land use change, municipal waste landfills, and the application of sewer sludge to crop land.

3.2.4. Right to know under the Aarhus Convention’s Kiev PRTR Protocol. The Kiev Protocol on Pollutant Release and Transfer Registers (PRTR Protocol), a Protocol to the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, can serve as a legally binding means to ensure the public’s right to know about releases of mercury and other pollutants from industrial sources. While the Aarhus Convention and the PRTR Protocol were developed and are administered under the United Nations Economic Commission for Europe (UNECE), they are both open to accession by any member of the United Nations. Countries outside of the UNECE region could strengthen their citizens’ ability to monitor, respond to, and possibly prevent mercury pollution by acceding to the PRTR Protocol.

3.2.5 Potential synergies with the UN Framework Convention on Climate Change. As Governments simultaneously discuss how to address climate change in the next decade and beyond and how to reduce risks from mercury, they may wish to contribute to both objectives by exploring and achieving mercury-reduction “co-benefits” through greenhouse gas (GHG) mitigation and other synergies. The greatest opportunities in this area stem from the fact that GHG-reduction policies that result in the combustion of less coal will also result in less atmospheric emissions of mercury.

3.3. Options for Amending Existing International Legal Instruments

This section identifies and discusses options for amending the substantive terms of existing international legal instruments. These options could allow the global challenges posed by mercury to be addressed in a comprehensive manner, while not requiring the establishment of a wholly new legal instrument. They include:

3.3.1. Expanding the scope of the Stockholm Convention. Amending the Stockholm Convention to expand its coverage to include mercury could allow some or all of the global mercury priorities to be addressed while utilizing the existing procedures, mechanisms, and institutions of the Stockholm Convention, including its financial mechanism. However, the only politically feasible approach to amending the Stockholm Convention is probably under the terms of its Article 21, which could result in a “split regime,” in which a three-fourths majority of Parties was bound by the amended version of the Convention and the remaining Parties were bound by the original version. Having two forms of the Convention in force could diminish the effectiveness of both.

3.3.2. Opening the LRTAP Convention and its Heavy Metals Protocol to global participation. Opening the LRTAP Convention and its Heavy Metals Protocol to participation beyond UNECE member states could potentially lead to a legally binding, global instrument that deals with some of the major anthropogenic sources of mercury emissions. In discussing this issue, LRTAP Parties have grappled with how to avoid a “split regime.” The record of other UNECE treaties that have been amended to open their membership to non-UNECE States while avoiding the “split regime” problem is not encouraging—none of those amendments has yet entered into force or received widespread support from LRTAP Parties. For those UNECE instruments that have always been open to global membership, no non-UNECE State has joined.

3.4. Options for New International Legal Instruments

This section identifies and discusses options for new instruments that could be used to address the global challenges of mercury, including a protocol to an existing treaty and a new, self-standing convention:

3.4.1. Mercury protocol to the Stockholm Convention. Developing and adopting a free-standing protocol to the Stockholm Convention could result in a legal instrument that comprehensively addresses mercury, while avoiding the undesirable situations that could arise from amending the Convention to cover all forms of mercury. A primary advantage of a Stockholm mercury protocol

would be that the protocol could utilize and build on many of the institutions, procedures, and mechanisms that already exist under the Stockholm Convention.

Unless the Stockholm Conference of the Parties decided otherwise, negotiations on a mercury protocol would take place under the authority of the Convention, not the UNEP Governing Council. In the absence of the COP adopting an alternative approach, consideration and possible adoption of a mercury protocol would be undertaken by the COP pursuant to the Convention's ordinary rules of procedure regarding meetings and decision-making, which, at present, include a consensus decision-making rule.

3.4.2. Free-standing mercury convention. Like the mercury protocol option, an independent, free-standing mercury convention could have a scope as broad or narrow, and commitments as deep or shallow, as Governments agreed. The main contrasts with the protocol option are that, in a free-standing convention, negotiations would be launched under UNEP Governing Council processes rather than the Stockholm Convention, there would likely be fewer opportunities to utilize mechanisms and institutions of existing agreements, and the costs of supporting the convention could thus be higher. However, the much more substantial costs of implementing the convention domestically would likely not be significantly different from those under the Stockholm protocol option. A free-standing mercury convention could take either of two basic approaches: a *framework/protocol approach*, or a *control measures approach*. States could design either approach to deal with mercury only, or mercury and other persistent inorganic pollutants.

4. Response Measures and Strategies

Part 4 identifies available response measures and strategies for achieving the seven global mercury priorities. The information is presented in seven tables (one for each global priority). Each table includes two or more strategic objectives related to achieving the featured priority, and several possible response measures that may contribute to achieving each of those strategic objectives. The tables are intended to provide the OEWG with a useful, readily available compilation of actions that stakeholders might take to address a particular aspect of the mercury problem. OEWG members may wish to consider this information as they examine the feasibility and effectiveness of the voluntary and legally binding approaches discussed in Part 3 of the Analysis.

ACRONYMS AND ABBREVIATIONS

AIDS	acquired immunodeficiency syndrome
ARM	Association for Responsible Mining
ASM	artisanal and small-scale gold mining
BAT	best available techniques
BEP	best environmental practices
CCS	carbon capture and sequestration
CDM	Clean Development Mechanism
CFCs	chlorofluorocarbons
CIS	Commonwealth of Independent States
CO ₂	carbon dioxide
COP	Conference of the Parties
COP/MOP	Conference of the Parties serving as the meeting of the Parties
CRC	Chemical Review Committee
ESM	environmentally sound management
EU	European Union
FAO	Food and Agriculture Organization
FCTC	WHO Framework Convention on Tobacco Control
GC	Governing Council
GEF	Global Environment Facility
GEF-5	fifth replenishment of the GEF
GEN	Global Ecolabelling Network
GHG	greenhouse gas
Hg	mercury
ICCM	International Conference on Chemicals Management
ICMM	International Council on Mining and Metals
IGCG	integrated coal gasification combined cycle
IGO	intergovernmental organization
IMO	International Maritime Organization
INC	intergovernmental negotiating committee
ISO	International Standards Organization
IUAPPA	International Union of Air Pollution Prevention Associations
KPCS	Kimberley Process Certification Scheme
LRTAP	Convention on Long-Range Transboundary Air Pollution
MARPOL	Convention for the Prevention of Marine Pollution from Ships
MEA	multilateral environmental agreement
NAFTA	North American Free Trade Agreement
NGO	non-governmental organization
ODA	official development assistance
ODS	ozone depleting substance
OEWG	Open-ended Working Group
OEWG6	Sixth Meeting of Basel Convention Open-ended Working Group
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PFOS	perfluorooctane sulfonate
PIC	prior informed consent
PIP	persistent inorganic pollutant
POPRC	Persistent Organic Pollutants Review Committee

POP	persistent organic pollutant
PrepCom	preparatory committee
PRTR	pollution release and transfer register
PTS	persistent toxic substance
QSP	Quick Start Programme
SAICM	Strategic Approach to International Chemicals Management
SP	Strategic Program
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
USD	United States dollars
USEPA	United States Environmental Protection Agency
VCM	vinyl chloride monomer
WHO	World Health Organization
WSSD	World Summit on Sustainable Development

Analysis of Possible Options to Address the Global Challenges to Reduce Risks from Releases of Mercury

1. INTRODUCTION

1.1. Background and Purpose of the Analysis

1. In its Decision 24/3, part IV, the UNEP Governing Council recognized “that current efforts to reduce risks from mercury are not sufficient to address the global challenges posed by mercury” and concluded, therefore, “that further long-term international action is required to reduce risks to human health and the environment and that, for this reason, the options of enhanced voluntary measures and new or existing international legal instruments will be reviewed and assessed in order to make progress in addressing this issue.”¹

2. Decision 24/3 IV establishes an ad hoc open-ended working group (OEWG) of Governments, regional economic integration organizations, and stakeholder representatives to carry out this review and assessment. The OEWG’s work will be guided by seven priorities set out in Paragraph 19 of the Decision:

- “... (a) To reduce atmospheric mercury emissions from human sources;
- (b) To find environmentally sound solutions for the management of waste containing mercury and mercury compounds;
- (c) To reduce global mercury demand related to use in products and production processes;
- (d) To reduce the global mercury supply, including considering curbing primary mining and taking into account a hierarchy of sources;
- (e) To find environmentally sound storage solutions for mercury;
- (f) To address . . . the remediation of existing contaminated sites affecting public and environmental health;
- (g) To increase knowledge on areas such as inventories, human and environmental exposure, environmental monitoring and socio-economic impacts . . .”

3. The terms of reference for the OEWG include, *inter alia*, to:

- “Examine, for each of the priorities set out in paragraph 19 [of Decision 24/3 IV]:
- (i) The range of available response measures and strategies;
- (ii) The feasibility and effectiveness of voluntary and legally binding approaches;
- (iii) Implementation options;

¹ UNEP Governing Council, Decision 24/3, *Chemicals Management*, part IV, “Mercury,” paras. 16-17 (2007) [hereinafter Decision 24/3 IV].

(iv) Costs and benefits of response measures and strategies . . .”²

4. Decision 24/3 IV also requests UNEP Chemicals, as secretariat for the OEWG, “to prepare the analytical and summary reports necessary for [the OEWG’s] work.”³ This Analysis provides information to the first meeting of OEWG to assist in its discussion of increased efforts or additional measures to reduce risks from mercury releases.

1.2. Scope and Structure

5. The main focus of this Analysis is on *global* options for enhanced voluntary measures and new or existing international legal instruments that might reduce risks to human health and the environment from the global challenges posed by mercury. The Analysis thus examines legally binding and non-binding instruments that are or would be global in scope, as well as voluntary measures that could be enhanced through global application, participation, or coordination. Several of these options, especially the voluntary ones, are already being developed or used by one or more States, or by other stakeholders in one or more economic sectors or geographic regions. While the Analysis occasionally references some of these examples to illustrate or explain how a global option might work, it does not pretend to present the totality of the many instruments and approaches that Governments, intergovernmental organizations (IGOs), non-governmental organizations (NGOs), or the private sector might use on an individual, regional, or partnership basis to address the challenges of mercury. Moreover, it does not address situations in which regionally specific mercury challenges may most effectively be addressed through regional agreements.

6. In respect to partnerships, the Analysis adheres to the approach suggested in Decision 24/3 IV, which sets up a dual process of (i) further developing the Global Mercury Partnership Programme (Paragraph 27) and (ii) establishing the ad hoc OEWG to review and assess options for enhanced voluntary measures and new or existing international legal instruments (Paragraph 28). Decision 24/3 IV thus demonstrates the Governing Council’s concurrent commitments to continue elaborating the Partnership Programme and to explore the possibility of taking additional measures, including legally binding ones, for dealing with the global mercury problem.

7. The Analysis recognizes that, at the time of preparation, it was not apparent how the respective efforts undertaken under the dual Paragraphs 27 and 28 processes might be coordinated or integrated. The Analysis assumes that achieving such integration will be one of the tasks the participants in each process and, ultimately, the Governing Council, will address. However, clear instructions as to whether or how that integration may be accomplished have not yet been given. Accordingly, the Analysis does not presuppose the conclusions or recommendations of the partners and other stakeholders who are developing an overarching framework for the Global Mercury Partnership Programme.

8. As discussed in Part 3.1.3, the Analysis identifies public-private partnerships and the UNEP Mercury Partnership Programme as important components of a strategic approach towards technology transfer and assistance to address mercury. Additionally, the Analysis describes partnerships as a valuable implementation tool that can be used under any global approach to address mercury, including voluntary or legally binding approaches. The OEWG may wish to consider how it might take account of progress towards the development of the Partnership

² *Id.* para. 30(b).

³ *Id.* para. 37.

Programme's overarching framework and, depending on that progress, it may wish to treat the strengthened Partnership Programme as an additional, distinct option for enhanced voluntary measures.

9. Because the purpose of the Analysis is to provide information that the OEWG might find useful as it develops options and possible recommendations to present to the Governing Council, the Analysis refrains from making recommendations as to the course of action the OEWG might take. Similarly, the Analysis does not evaluate the feasibility or effectiveness of the options for voluntary and legally binding approaches that it identifies in Part 3, and instead leaves that task to the discretion of the OEWG. An estimate of the costs and benefits of response measures and strategies is not included.

10. The Analysis strives to use words and phrases in a manner that is consistent with the ways in which similar words and phrases are used in Decision 24/3 IV:

“Global mercury priorities” are the seven priorities listed in Paragraph 19 of the Decision.

“Implementation options” are the different approaches for global, enhanced voluntary measures or legally binding instruments identified in Part 3 of this Analysis, which may be used to achieve some or all of the global mercury priorities.

“Strategic objectives” are objectives that, if achieved, would substantially contribute to addressing a global mercury priority through an important source, economic sector, or activity.

“Available response measures” are existing, specific activities or actions, which Governments or other stakeholders might take to achieve one or more strategic objectives, and which may be taken voluntarily or pursuant to a legally binding requirement.

11. The Analysis is presented in four Parts:

Part 1 (the present Part) is the Introduction.

Part 2 identifies and discusses considerations related to the feasibility and effectiveness of international approaches that are voluntary and those that are legally binding. It begins with a general discussion of some of the considerations relevant to using voluntary or legally binding instruments to address global issues such as mercury. It then identifies criteria that the OEWG may use in its examination of the potential feasibility and effectiveness of options for undertaking long-term international action on mercury.

Part 3, the core of the Analysis, identifies implementation options for enhanced voluntary measures and new or existing international legal instruments that could be pursued to advance long-term international action on mercury. It does this in four separate sections: (1) Options for Enhanced Voluntary Measures; (2) Options for Approaches under the Current Provisions of Existing International Legal Instruments; (3) Options for Amending Existing International Legal Instruments; and (4) Options for New International Legal Instruments. For each identified option, the Part: describes the option and how it might work, including relevant background information; identifies the global mercury priorities that the option could address; discusses some of the resource considerations that may be pertinent to an evaluation of the option's feasibility and effectiveness; and summarizes some of the procedures that may be necessary to adopt or implement the option.

Part 4 identifies available response measures and strategies for achieving the seven global mercury priorities defined in Decision 24/3 IV, Paragraph 19. The information is presented

in seven tables (one for each priority), which each include two or more strategic objectives related to achieving the respective priority, and response measures that may contribute to achieving each strategic objective.

12. The Analysis concludes with a References section at the end that lists the authorities and documents cited in the Analysis, including their internet addresses where available.

2. FEASIBILITY AND EFFECTIVENESS OF VOLUNTARY AND LEGALLY BINDING APPROACHES

13. This Part identifies and discusses considerations related to the feasibility and effectiveness of international approaches that are voluntary and those that are legally binding. The Part begins with a general discussion of some of the considerations relevant to using voluntary or legally binding instruments to address global issues such as mercury. It then identifies criteria that may be applicable to an examination of the potential feasibility and effectiveness of the options included in Part 3.

14. Before beginning the general discussion, a few preliminary points should be made. First, voluntary approaches may take several forms. In this Part of the Analysis, the discussion in respect to voluntary approaches focuses primarily on multilateral political commitments, such as high-level, non-legally binding political commitments by States. However, voluntary approaches may also include bilateral or multilateral cooperation by States without an accompanying political commitment, such as the UNEP guidelines for the voluntary prior informed consent (PIC) procedure.⁴ They may include unilateral actions by States, such as the ban by the United States on the use of chlorofluorocarbons (CFCs) in spray cans, which reduced global releases of CFCs by 25% in 1977.⁵ Public-private partnerships, which may be used under voluntary approaches or to help implement legally binding approaches, may involve non-State actors. In the area of international chemicals management, multi-stakeholder processes have led States to invite representatives of civil society, including the private sector, to join them in making commitments.⁶

15. Second, voluntary and legally binding approaches can be adopted or implemented in tandem or in multiple combinations. For example, many of the options identified in Part 3 of this Analysis would, if implemented, address different global mercury priorities, different aspects of the same priorities, or the same priorities, but to different degrees of depth. While this Analysis assumes that tandem or combination approaches to address mercury are possible, it does not explore the specific circumstances under which they might be desirable, nor does it attempt to identify all of their many possible permutations.⁷

⁴ UNEP Governing Council, *London Guidelines for the Exchange of Information on Chemicals in International Trade*, Decision 15/30 (1989). The voluntary PIC procedure was eventually superseded by the legally binding Rotterdam Convention. See ROTTERDAM CONVENTION ON THE PRIOR INFORMED CONSENT PROCEDURE FOR CERTAIN HAZARDOUS CHEMICALS AND PESTICIDES IN INTERNATIONAL TRADE, 10 Sept. 1998.

⁵ See William R. Moomaw, *The Environmental Era - From Two Sides of the Atlantic*, Newsletter of the International Human Dimensions Programme on Global Environmental Change, No. 3/01 (Bonn, F.R.G. 2001).

⁶ See, e.g., International Conference on Chemicals Management, DUBAI DECLARATION ON INTERNATIONAL CHEMICALS MANAGEMENT (2006).

⁷ For an in-depth analysis of the use of "instrument mixes" to address environmental problems, including mercury, at the national level in OECD countries, see Organisation for Economic Co-operation and Development (OECD), INSTRUMENT MIXES FOR ENVIRONMENTAL POLICY (2007).

16. A related, third point that the ad hoc OEWG may wish to consider relates to *breadth* or *scope* of coverage: whether it may be most effective to deal with the global challenges of mercury under a comprehensive, over-arching instrument; a number of narrower, discrete interventions; or a comprehensive instrument that may be supplemented by other discrete efforts (this consideration may also include the merit of relying upon regional instruments—see discussion in Part 3, Paragraph 129). As will be seen in Part 3, the breadth or scope of an option is not necessarily determined by whether it is voluntary or legally binding, though it may sometimes be easier to achieve a broad scope in a voluntary instrument. In contrast, the *depth* or *ambitiousness* of commitments under an option may be more directly influenced by their legal nature.

17. Finally, States or private actors may engage in strategic behavior in anticipation of the entry into force of commitments under a legally binding instrument. For example, such behavior has been reported under the Montreal Protocol, in respect to Parties increasing their production and stockpiles of ozone depleting substances (ODS) in anticipation of an expected ODS production phase out.⁸ This type of behavior has been possible, to a substantial extent, because the Montreal Protocol restricts production and consumption of ODS (defined as production plus imports minus exports), but does not strictly prohibit the use of ODS.⁹ In the case of mercury, States or other actors might similarly engage in strategic behavior, such as stockpiling mercury in anticipation of an import-export ban, thereby increasing global mercury reserves or consumption and potentially undermining achievement of the instrument's objectives. Overcoming this kind of behavior might be accomplished through well-crafted control measures on use in products and processes. Transparent negotiations, effective monitoring, and the availability of independently verifiable data may also help dissuade strategic behavior. If a legally binding, global instrument on mercury were adopted, its entry into force would likely be no earlier than 2012. The OEWG may wish to consider what interim measures might be needed to discourage strategic behavior in that case.

2.1. General Considerations

18. The preference to address a particular international environmental problem with a voluntary or legally binding approach may be affected by many considerations. States may sometimes prefer voluntary approaches because they are unwilling to limit their options through legally binding commitments. For example, one or more major States may be reluctant to enter into a binding agreement because of competing domestic or international priorities, or because of a general aversion to using international law to approach the particular problem under discussion. An example of the former situation may be found in the 1996 Habitat Agenda's non-legally binding commitment to eliminate lead from gasoline:¹⁰ for some States, concern over the impact on their lead mines or gasoline refineries outweighed their willingness to support a legally binding agreement, even though the serious effects of lead on human health were well known and cost-effective alternatives were available.

19. Voluntary political commitments may allow for greater experimentation, adaptation and flexibility. This may be so because they are easier to change than legally binding commitments, which typically require a formal amendment and ratification process, and a formal withdrawal

⁸ See, e.g., Tseming Yang, *International Treaty Enforcement as a Public Good: The Role of Institutional Deterrent Sanctions in International Environmental Agreements*, 27 MICH. J. INT'L L. 1131, 1145 (2006) (citing *Report of the Implementation Committee under the Non-compliance Procedure for the Montreal Protocol on the Work of Its Twenty-Seventh Meeting*, para. 15, UNEP/OzL.Pro/ImpCom/27/4 (Oct. 13, 2001)).

⁹ See Montreal Protocol, arts. 1.5, 1.6, 2.

¹⁰ U.N. Human Settlements Program, *The Habitat Agenda Goals and Principles, Commitments and the Global Plan of Action*, para. 43(bb) (1996).

procedure that may involve a waiting period. That said, a variety of approaches have been used in binding international environmental agreements to provide flexibility in light of changing scientific knowledge or other factors. These approaches include: establishing scientific and technical bodies that can develop guidelines or recommendations on a variety of matters, usually more quickly and efficiently than could the Conference of the Parties (COP) acting on its own; listing controlled substances or their phase-out schedules under an annex, which may be easier to amend than the treaty's body (e.g., Montreal Protocol¹¹ and Stockholm Convention¹²); and substantive decision-making that does not always require consensus, such as the Montreal Protocol procedures for adjusting annexes.¹³

20. States may be wary of entering into binding legal obligations if the seriousness of the risks posed or the costs of compliance are uncertain. Alternatively, they may be strategic in balancing the ambitiousness of a commitment against the extent to which it can be enforced. Thus, the need to reach agreement on a legally binding solution may sometimes preclude it from having a strong enforcement mechanism, particularly if negotiators are operating under a consensus decision-making rule. More generally, international environmental agreements typically do not contain the types of strong enforcement mechanisms that may be found, for example, in trade and investment agreements.¹⁴

2.1.1. Implementation and Compliance

21. The question of whether an agreement's commitments are enforceable is related to, but distinct from, the more fundamental question of whether a legally binding agreement is more likely to be complied with or effectively implemented than a voluntary political one. Several factors tend to make it more likely that legally binding commitments may be implemented and complied with to a greater extent than will voluntary ones.

22. When the international community concludes a legally binding instrument with meaningful commitments, it makes a clear statement that it views the problem being addressed as serious and the commitments as credible. A voluntary political commitment conveys these messages less clearly. The United Nations Charter, for example, would send a different message if it were a voluntary political commitment. This message of seriousness leads to a greater likelihood of implementation and compliance, because relevant actors—e.g., individual States, intergovernmental organizations, civil society, and the private sector—are likely to view the commitment as more credible and likely to be honored.

¹¹ MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER, 16 Sept. 1987, as amended.

¹² STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS (POPs), 23 May 2001.

¹³ If consensus proves impossible to obtain, the Protocol's Meeting of the Parties may adjust annexes upon a two-thirds double-majority vote of developing ("Annex 5 Parties") and developed ("non-Annex 5") countries. See Montreal Protocol, art. 2.9.

¹⁴ While one might argue this is so because States treat trade and investment more seriously than they do environment and health, a more practical reason may be that enforcement mechanisms in trade agreements are usually intended to resolve specific disputes between two or more States. They are thus analogous to a legal suit in which an entity alleges that it has been (or is being) directly harmed by the actions of another. In contrast, because multilateral environmental agreements (MEAs) are generally intended to address global, collective-action problems, their non-compliance mechanisms usually exist to determine and respond to a Party's acts or omissions (such as failure to prepare reports or reduce emissions) that may endanger the overall effectiveness of the instrument, but may not be the direct cause of measurable harm against any particular Party.

23. International environmental agreements typically do not include strong enforcement mechanisms. As a result, domestic and international publicity regarding a State's failure to adhere to its commitments can be an important means of encouraging implementation and compliance. The impact of an allegation that a State has violated a legally binding obligation—and thus has acted unlawfully—is likely to be greater than an otherwise identical allegation that the State has failed to fulfill a voluntary political commitment, because “legalization is one of the principal methods by which states can increase the credibility of their commitments.”¹⁵ However, when an issue is politically prominent in a country and violations are easy to detect, domestic political and public pressure to comply may be effective even without the added formality and force of a legally binding international obligation.

24. Because legally binding international commitments are regarded as “law,” their implementation by States may be less variable over time than may be the case for voluntary political commitments. When governments or leaders change, it is common that national policies change. In such cases, revising national policy regarding implementation of, or adherence to, a voluntary political commitment may be an easy matter. Doing so may not require a public renunciation or revision of the agreement, but instead might be accomplished simply by ignoring it. In contrast, international obligations under legally binding instruments do not cease with a change in government. They are more difficult to alter or withdraw from, and a new government's failure to comply can become publicly apparent, especially when an agreement contains mandatory reporting requirements.

25. The domestic process of formally ratifying and adopting implementing legislation for a legally binding international instrument may increase the likelihood that a State will implement and comply with it. Depending on the country, the process of negotiating and entering into legally binding commitments is more likely to involve all of the relevant, concerned divisions of the government than is the process of making a voluntary political commitment, because of the more serious legal implications of entering into a binding instrument. This greater involvement and awareness may enhance the likelihood that these parts of government will more effectively undertake their respective responsibilities in implementing the agreement.

26. Similarly, at the international level, the higher profile and stakes of a legally binding instrument can increase the likelihood that all relevant countries, IGOs, civil society organizations, and the private sector will participate in, or observe, the development of the instrument. This greater involvement during the negotiations may carry over to the period after the instrument has been adopted, leading to greater advocacy and support for the instrument from all relevant actors, which in turn may lead to more effective implementation and compliance. This dynamic also explains some of the value of undertaking multi-stakeholder, participatory processes in the development of non-legally binding global instruments.

27. Legally binding instruments are more likely to create and sustain the international institutional support that has typically been necessary in dealing with international environmental problems. These institutions include: a Conference of the Parties (COP), in which participating States can oversee implementation of the agreement, review and assess its effectiveness, and adopt additional policies and measures intended to further the pursuit of its objectives; a secretariat to administer the treaty, including performing such functions as arranging for meetings, facilitating communications among Parties and observers, and compiling reports; one or more subsidiary bodies, such as a scientific body to conduct research on relevant scientific questions; compliance procedures and mechanisms to monitor and facilitate compliance by all Parties; and a financial

¹⁵ Kenneth W. Abbott and Duncan Snidal, *Hard and Soft Law in International Governance*, 54 INTERNATIONAL ORGANIZATION 421, 426 (2000).

mechanism to assist developing countries in the implementation of their commitments. Most legally binding multilateral environmental agreements provide for these institutions and support mechanisms to varying degrees or are in the process of developing them (e.g., the Montreal Protocol; the Basel, Rotterdam, and Stockholm Conventions; and the UN Framework Convention on Climate Change and its Kyoto Protocol). Some voluntary international instruments may have analogous institutions and support mechanisms, but usually to a lesser extent. For example, the SAICM's International Conference on Chemicals Management (ICCM) will meet less frequently than COPs typically do; the SAICM secretariat is smaller; the ICCM currently has no provisions for intersessional activity, reporting by Governments, or monitoring; and the SAICM's voluntary Quick Start Programme (QSP) trust fund is scheduled to accept contributions for only five years from the date of its inception.

2.1.2. Costs

28. This section discusses some general considerations related to the costs of negotiating and implementing multilateral agreements. An important, additional consideration that is not elaborated (but which is critically important in the case of mercury) is the present and future costs to human health, public welfare, and the environment of *inaction*.

2.1.2.1. Negotiations

29. The costs of negotiating and finalizing a multilateral agreement will be a function of the complexity of the issues (and hence the number of sessions required) and the degree to which the negotiations foster inclusive participation (for example, by translating documents and sessions into all of the UN languages and supporting travel expenses of developing country participants or other stakeholders). Generally speaking, less time and resources will be needed to negotiate an agreement in which there is a high level of certainty regarding the source, nature, and severity of risk and the need for international action, and which does not contain novel or complicated implementation and compliance mechanisms. The costs of negotiating the Rotterdam Convention were about US \$3.2 million (1996-1998);¹⁶ the Stockholm Convention was slightly less than \$6 million (1998-2001);¹⁷ and the non-legally binding Strategic Approach to International Chemicals Management (SAICM) has been estimated at about \$6.5 million (2003-2006).¹⁸ These figures do not include the costs borne by hosting States or by individual States to participate in the negotiations, though they do include participation support provided to developing countries and some other stakeholders. Neither do they take into account inflation nor the fluctuating value of the

¹⁶ Intergovernmental Negotiating Committee for an International Legally Binding Instrument for the Application of the Prior Informed Consent Procedure, Sixth Session, *Activities of the Secretariat in the Interim Period and Review of the Situation as Regards the Trust Fund*, 12, UNEP/FAO/PIC/INC.6/3 (1999). This figure covered five INCs and a Conference of Plenipotentiaries, including conference services, participants travel, and core secretariat costs over the negotiating period. Note that the Convention's negotiation followed an extended period of operation of the voluntary PIC procedure, which provided experience that facilitated the negotiation process.

¹⁷ See Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants, Sixth Session, *Activities of the Secretariat and Review of the Situation as Regards Extrabudgetary Funds*, para. 12, UNEP/POPS/INC.6/3 (June 2002). The Stockholm negotiations required eight major intergovernmental meetings. The \$6 million cost did not include staff, premises, equipment, communications and other costs provided by UNEP.

¹⁸ E-mail communication with SAICM Secretariat, 7 Aug. 2007. SAICM negotiations included three multi-stakeholder Preparatory Committee meetings, various regional meetings, and an International Conference on Chemicals Management (ICCM).

U.S. dollar. Actual meeting costs have changed considerably since 2001, especially regarding the cost of security for the meetings.

2.1.2.2. Implementation

30. The costs of implementation actions are likely to be impacted by the choice between voluntary and legally binding approaches. Because the expectations of overall implementation and compliance may be lower in voluntary approaches, the implementation costs for individual countries may also be lower—significantly so, in some cases. Governments may feel that they have more flexibility under voluntary approaches to decide whether and when the costs of implementing a particular provision of the agreement (or all of the agreement) may be desirable to bear.

31. By establishing mandatory control measures applicable to all Parties (or to all Parties within a given class of countries), legally binding approaches may lead to a “level playing field” in which specific economic sectors are subject to similar controls, regardless of where those economic sectors are located. Such a level playing field can discourage “free riding,” stimulate innovation, and foster a faster global transition to alternative processes and techniques. Legally binding approaches that include international trade restrictions that apply to Parties and non-Parties alike may be especially effective in this regard.

32. Among the most successful multilateral environmental agreements (MEAs) are those that contain provisions for mandatory financial mechanisms. For example, the Montreal Protocol is often described as one of the most effective MEAs, in part because of its mandatory Multilateral Fund.¹⁹ Without such mechanisms, and without assurances that they will be fully funded, many developing countries may be reluctant to agree to ambitious, verifiable terms within an agreement out of concern that a lack of resources may make it difficult or impossible for them to comply. Thus, the effectiveness of an agreement—whether voluntary or legally binding—can be closely tied to the availability of financial and technical assistance to aid in its implementation. Voluntary financial contributions are likely to be less generous and less reliable. Mandatory financial mechanisms are found only in legally binding instruments.²⁰ They may entail significant costs for donor States, but may be determinative as to whether an ambitious, legally binding, global approach is possible.

33. The costs of supporting treaty institutions depend on the extent of administrative services the agreement requires. The 2006 budgets for the secretariats of a few legally binding agreements are displayed in the table below. In comparison, the secretariat’s annual budget for the SAICM—a voluntary agreement whose secretariat currently has four full-time staff—is \$1.2 million.²¹

¹⁹ See, e.g., Jimin Zhao, *The Multilateral Fund and China's Compliance with the Montreal Protocol*, 11 JOURNAL OF ENVIRONMENT & DEVELOPMENT 331 (2002); Duncan Brack, *Monitoring the Montreal Protocol*, in VERIFICATION YEARBOOK 209, 209 (2003).

²⁰ Of course, not all legally binding MEAs include mandatory financial mechanisms—the Basel and Rotterdam Conventions do not, and both have experienced years of debate among Parties on the issue. Most voluntary instruments do not provide for any financial mechanism, but some, such as SAICM, include trust funds that are supported through voluntary contributions. While some countries contribute generously to these funds, the funds tend to have far fewer resources than are necessary to meet demand and help fulfill the objectives of the agreement.

²¹ See International Conference on Chemicals Management (ICCM), Resolution. I/1, Table 2, at 6 (2006). Note that the amount of money Governments actually contribute in support of a secretariat may be significantly less than the budgeted amount, especially when contributions are voluntary and not made in response to an indicative assessment.

Secretariat	Staff	Location	2006 Budget (USD) ²²
Climate	129.5	Bonn	\$33,554,365
Ozone	11	Nairobi	3,323,532
Basel	20	Geneva	4,121,940
Rotterdam	18.8	Geneva/Rome	3,710,224
Stockholm	17.75	Geneva	5,275,636

2.2. Criteria for Evaluating International Approaches

34. This section identifies some of the criteria that the ad hoc OEWG may wish to use in evaluating the potential feasibility and effectiveness of the voluntary and legally binding approaches discussed in Part 3. Striking the right balance between feasibility and effectiveness can be elusive. The easiest (i.e., most feasible) way to reach consensus among diverse viewpoints may often be to find the lowest common denominator, which may result in an agreement that is ineffective in dealing with the problem. Achieving broad state participation may become more challenging as agreements become more ambitious, clear, and transparent.

2.2.1. Feasibility Criteria

35. The feasibility of international approaches is determined, fundamentally, by political considerations reflecting national, regional, and international political dynamics. These political considerations may be shaped by several factors:

36. **State of knowledge.** The state of knowledge about a threat directly influences the perceived need for action. It includes the knowledge of scientists, government officials, the media, and the public. Important areas of knowledge include, among others, the nature of the threat, its immediacy (i.e., whether it is occurring in the present, in the near-term, or in the distant future), the irreversibility and severity of possible damage, and the potential distribution of harm between different geographical areas and sectors of society. Governments may seek to avoid tying their hands with international obligations when there is significant uncertainty about the seriousness or nature of the problem to be addressed, or about the economic or political costs of fulfilling those

²² These numbers reflect the 2006 “core” secretariat budgets, which include staff, subcontractors, equipment and premises, conference and meeting services, and overhead; they do not include the costs of developing country participation in meetings, nor does the Climate budget include “supplementary activities” for the UN Convention on Climate Change (UNFCCC) and its Kyoto Protocol undertaken by the secretariat and supported by voluntary contributions, which had a pro-rated 2006 total of \$14,059,697. Sources: UNFCCC, Decision 12/CP.11, *Programme Budget for the Biennium 2006-2007*, at 23, FCCC/CP/2005/Add.1 (2006); Montreal Protocol, Decision XVII/42: *Financial matters: Financial reports and budgets*, Annex IV, at 87, UNEP/OzL.Conv.7/7-UNEP/OzL.Pro./17/11 (2005); Basel Convention, Decision VII/41: *Financial matters*, Annex I, at 79, UNEP/CHW.7/33 (2004); Rotterdam Convention, Decision RC-2/7: *Amendment of the financing and budget arrangements for the biennium 2005–2006*, Table 1, at 32, UNEP/FAO/RC/COP.2/19 (2005); Stockholm Convention, Decision SC-1/4: *Financing and Budget for the Biennium 2006-2007*, Table 1, at 33, UNEP/POPS/COP.1/31 (2005).

obligations.²³ It should be noted that the state of knowledge concerning the risks from mercury is quite high, as reflected in the several Governing Council decisions on mercury, reports and assessments by UNEP, regulations and health advisories of individual countries, and numerous scientific and health studies undertaken by Governments, academia, the private sector, and other stakeholders.

37. **Need for global action.** Whether there is a perceived need for global action depends on the extent to which individual countries can act unilaterally to protect themselves effectively from a harm; whether the harm is caused by transboundary movement of pollutants; whether the efforts of one country to address the harm may be undercut by another's failure to act; and whether damages (including socio-economic impacts) suffered by individual countries may have "spill-over effects" that could place other countries at additional environmental, economic, political, or other risk. The aspirations of influential stakeholders, when deeply held and forcefully expressed, can influence the perceived need for action and, in turn, the willingness of States to agree to targets, timetables, and other ambitious commitments.

38. **Costs.** The costs of an international agreement or approach may include the costs of developing it; the costs of establishing and operating any institutions created by it; the costs of engaging in activities related to it (e.g., ratifying it, participating in Conferences of the Parties or other meetings); and the costs of domestic implementation beyond any domestic actions already being taken. Domestic implementation is usually the largest cost, by far, and it may be borne by different stakeholders over time (e.g., initially, the costs of developing legislation and regulations will be borne by Governments, while later, they will bear the costs of enforcement and the private sector may bear the costs of compliance). An additional cost-related factor Governments may consider is the *savings*, or reduced costs, they may experience through implementation of enhanced global actions. These may occur in such areas as health care and site remediation, or they may be benefits from increased worker productivity, longevity, etc. For developed countries, anticipated costs may also include those of supporting a financial mechanism or other form of assistance for developing countries.

39. **Availability of technology.** This criterion is closely related to costs, because the expected costs of domestic implementation will depend in large part on the existence, availability, and cost of less-polluting alternative products and processes. The necessity of providing developing countries with access to these technologies and training in their use is also a consideration, including licensing requirements. Legally binding approaches in particular may have an important *technology-forcing* effect that enables regulated sectors to comply with emissions reduction and mitigation requirements at far lower cost than originally estimated.

40. **Legal feasibility.** This criterion relates to whether legal impediments to a given international approach exist, either under international law or under the domestic law of participating countries.

2.2.2. Effectiveness Criteria

41. An international regime's effectiveness is measured by its success in achieving its objectives. The objective articulated in Decision 24/3 IV is to reduce risks to human health and the environment from mercury pollution. Generally speaking, the most effective agreements will result in a high degree of compliance with ambitious environmental commitments. Many of the criteria listed below are closely interrelated.

²³ See Kal Raustiala, *Form and Substance in International Agreements*, 99 AMERICAN JOURNAL OF INTERNATIONAL LAW 581, 592 (2005).

42. **Ambitiousness of commitments.** Perhaps the most important contributor to the effectiveness of an agreement is its *depth*, or “the extent to which it requires states to depart from what they would have done in its absence.”²⁴ An agreement with unambitious objectives or weak commitments may not solve the challenge it purports to address, even if all countries fully comply with their commitments under it.

43. **Scope of coverage.** Closely related to ambitiousness or depth, this criterion pertains to the breadth of commitments; i.e., whether they attempt to deal with some, many, or all of the causes of a problem. As noted above in Paragraphs 15 and 16, a global challenge like mercury may be addressed by a comprehensive, over-arching instrument with a broad scope. Alternatively, it may be addressed by a combination of different instruments or approaches with narrower scopes. The challenges of coordination will generally increase as the number of instruments or approaches increases.

44. **Clarity and precision of commitments.** International environmental agreements—whether voluntary or legally binding—very rarely provide for authoritative interpretation of their texts by third parties. Without such independent arbitration, disagreements among participants about the meaning of vague or imprecise commitments can derail cooperation and invite inaction. Clear, precise commitments are easier to understand and provide a better marker against which Governments and other stakeholders can determine whether they are being met.

45. **Achievability of commitments.** In addition to containing clear, ambitious commitments, effective agreements must contain commitments that are reasonably achievable. If they do not, few countries will adhere to them or, in the case of legally binding instruments, few countries will ratify or accede to them. For difficult global problems that entail great uncertainty or require technologies that at present are prohibitively expensive or unavailable as a practical matter, a framework or step-wise approach may be appropriate. Under this approach, the initial instrument establishes the institutional framework for action. It also contains procedural mechanisms for adopting subsequent supplemental instruments that may broaden and deepen the scope of coverage. Parties may use these as they become more confident in their ability to accept more ambitious commitments—or more convinced of the need to do so. (For a more in-depth discussion of the framework approach, please see *infra*, Part 3.4.2.1.)

46. **Participation.** For collective action challenges like mercury, in which a large number of countries contribute to the global problem through many different activities, broad participation by States is essential. The effectiveness of an agreement can be seriously undermined if one or a few major producer or consumer states do not participate. Additionally, the effectiveness of environmental agreements is nearly always enhanced by the participation of a wide range of civil society stakeholders.

47. **Compliance.** The ability of an agreement or approach to support mechanisms to monitor, evaluate, and facilitate compliance can be an important criterion of effectiveness when the agreement’s commitments are ambitious and clearly stated. Several features of the mercury problem suggest that particular attention should be paid to the question of compliance in formulating a global response. Because the benefits of limiting mercury pollution are public goods such as uncontaminated air, water, and food, there could be a significant temptation for some States to “free-ride” on the pollution control measures of others. This risk of opportunism is heightened by the fact that the economic costs and benefits of addressing the mercury problem may be unevenly distributed.

²⁴ George W. Downs et al., *Is the Good News About Compliance Good News About Cooperation?*, 50 INTERNATIONAL ORGANIZATION 379, 383 (1996).

48. **Transparency.** As noted above, an important factor in achieving compliance with an international agreement is a country's concern for its reputation. Transparent mechanisms for monitoring, reporting, and sharing information enhance knowledge and confidence, and contribute to the success of most effective multilateral environmental agreements.²⁵

49. **Financial and technical support.** When developing countries are confident that they will receive adequate financial and technical resources to assist them in implementation of their international commitments, they are usually more willing to agree to ambitious commitments that may better achieve the approach's underlying goals. Moreover, they are more likely to comply with those commitments because they will have a greater ability to do so. Thus, the extent to which these resources will be consistently available is an important effectiveness criterion.

50. **Responsiveness to changed circumstances.** Effective agreements and approaches can respond and adapt to changed circumstances, such as when new technologies emerge, political dynamics evolve, or knowledge about a problem matures, including through experiences gained by States and other stakeholders in working collaboratively to address the problem. Under legally binding approaches, States have achieved flexibility and responsiveness by, *inter alia*, adopting framework conventions and later supplementing them with more specific or stricter protocols; using easily amended annexes to list specific chemicals, technical requirements, and phase-out schedules; and allowing amendments and adjustments to be adopted under expedited procedures, such as super-majority voting.

51. **Timeliness.** The value of achieving an ambitious, comprehensive approach with clear, precise commitments, including those related to financial and technical resources, may be considered in light of the time that it may take for such an agreement to be developed and to enter into force.

3. IMPLEMENTATION OPTIONS FOR ENHANCED VOLUNTARY MEASURES AND NEW OR EXISTING INTERNATIONAL LEGAL INSTRUMENTS

52. This Part identifies implementation options for voluntary and legally binding approaches that could be used to further long-term international action on mercury. They are presented in four sections:

- (i) Section 3.1 includes options for enhanced voluntary measures,
- (ii) Section 3.2 includes options that may be taken under the current provisions of existing international legal instruments,
- (iii) Section 3.3 includes options for amending existing international legal instruments, and
- (iv) Section 3.4 includes options for new international legal instruments.

53. Each identified option is generally presented in the following manner: First, it begins with a description and background information that includes, where applicable, relevant precedents or analogous examples from international practice, especially multilateral environmental agreements and understandings that deal with chemicals and wastes. Next is a short discussion of how the option might address global mercury priorities.²⁶ After that, some of the resource considerations

²⁵ See David G. Victor et al., *Introduction and Overview*, in *THE IMPLEMENTATION AND EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL COMMITMENTS: THEORY AND PRACTICE* 1, 20 (David G. Victor et al. eds., 1998).

²⁶ The seven global priorities are listed in the Introduction to this Analysis, Paragraph 2.

related to the option are identified, such as technical and financial assistance for developing countries, the relationship the option might have to other agreements and approaches within the chemicals and wastes cluster, and resources that may be needed to develop and administer the option at the international level, if it were adopted. (While these passages on resource considerations do not discuss domestic implementation costs for individual countries, the reader may consider that such costs are, in aggregate, usually far greater than the costs of developing and administering an agreement at the international level.) Finally, each option includes a summary of some of the procedures that may need to be undertaken to initiate it.

54. Each of the options may be evaluated by applying the criteria identified in Part 2.2 above. As also mentioned above, voluntary and legally binding instruments and approaches may be adopted or implemented in tandem or in multiple combinations. Many of the options below would, if implemented, address different global mercury priorities, different aspects of the same priorities, or the same priorities, but to different degrees of depth. Thus, where an option does not have the potential to address comprehensively all of the global mercury priorities, it may be necessary or advisable to consider complementing the option with one or more other options.

3.1. Options for Enhanced Voluntary Measures

55. This section identifies and describes options for enhanced voluntary measures that may contribute to long-term international action to reduce risks to human health and the environment from mercury. The section interprets the term “enhanced voluntary measures” in Decision 24/3 IV to mean that the Governing Council has requested the ad hoc OEWG to review and assess options for voluntary measures that augment, or may be in addition to, voluntary measures that are already being undertaken on mercury.

56. The identified voluntary options include a high-level political declaration and plan of implementation; mercury codes of conduct; international action through technology transfer and assistance, including partnerships; and global eco-labeling and certification programs. The voluntary option of pollutant release and transfer registries is also noted, but discussed in more detail in Section 3.2.4, as one of the “Options for Approaches under the Current Provisions of Existing International Legal Instruments.”

57. Despite the modest number of identified options, most of them could be implemented in many different ways involving States, the private sector, NGOs, and other stakeholders working together in any number of combinations—often in partnership. As discussed in the Introduction, this Analysis avoids presupposing the conclusions or recommendations of the partners and other stakeholders who are developing an overarching framework for the Global Mercury Partnership Programme, as requested by the Governing Council in Decision 24/3 IV, Paragraph 27. The Analysis identifies public-private partnerships and the Mercury Partnership Programme as important components of a strategic approach towards technology transfer and assistance to address mercury. Additionally, the Analysis describes partnerships as a valuable implementation tool that can be used under any global approach to address mercury, whether voluntary or legally binding. The OEWG may wish to consider how it might take account of progress towards the development of the Partnership Programme’s overarching framework and, depending on that progress, it may wish to treat the strengthened Partnership Programme as an additional, distinct option for enhanced voluntary measures.

58. Because Decision 24/3 IV commits to increased efforts to address the *global* challenges of reducing risks from mercury releases, this section focuses on options for voluntary measures that could be taken at the global level, while recognizing that implementation of such measures may

occur at the international, national, regional, or local levels, and may involve partnership activities. For some of the options discussed in this section, the Analysis identifies, but does not elaborate upon, situations in which public-private partnerships or bilateral activities may be particularly appropriate.

3.1.1. High-Level Political Declaration and Plan of Implementation

59. A global, high-level mercury declaration and plan of implementation could: raise awareness among governments and civil society of the challenges posed by mercury; strengthen the political will to address those challenges; and establish mechanisms and processes to facilitate coordinated, comprehensive global efforts on mercury among key stakeholders.

3.1.1.1. Background

60. High-level political declarations have been used to address many issues of global concern, ranging from AIDS and sustainable development to energy, forests, and chemicals management. They may be initiated, adopted, or endorsed by the UN General Assembly or by other intergovernmental organizations. While their development can sometimes be as resource-intensive as the negotiation of multilateral conventions, their non-legally binding nature means they are not subject to ratification by States or entry-into-force requirements, which in some cases may delay the application of a legally binding instrument for many years.

61. The World Summit on Sustainable Development (WSSD) Plan of Implementation contains a paragraph on mercury²⁷ and the SAICM's Overarching Policy Strategy and Global Plan of Action include short passages on mercury. However, Governments have not yet adopted a global, comprehensive high-level mercury declaration and plan of implementation. The UNEP Governing Council's decisions on mercury—including those to establish the UNEP Mercury Programme, the Mercury Partnership Programme, and the ad hoc OEWG—have represented important steps towards possible comprehensive global action. Nevertheless, those decisions are not global high-level declarations in the sense of the WSSD Johannesburg Declaration on Sustainable Development or the Dubai Declaration on International Chemicals Management, because they were formally adopted only by the members of the Governing Council, rather than by all Governments. Moreover, they were not developed under, nor have they resulted in, a multi-stakeholder participatory process, which may be essential for achieving the objectives of the declaration.

62. A high-level declaration and plan of implementation for mercury could take one of at least two different basic forms. One form could be patterned after the three core texts of SAICM: (1) a political declaration expressing the commitment of Ministers, heads of delegation, and representatives of civil society and the private sector; (2) an overarching policy strategy setting out the scope of action, the needs to be addressed and objectives to be achieved, an outline for governance, capacity-building and technical cooperation, underlying principles, and financial and institutional arrangements; and (3) a global plan of action or guidance document setting out proposed work areas and activities for implementation.

²⁷ World Summit on Sustainable Development (WSSD), Johannesburg Plan of Implementation, para. 23(g).

63. A second form, patterned after, for example, the “Non-legally Binding Instrument on All Types of Forests,”²⁸ could be comprised of a single document somewhat more similar in form to a treaty than the SAICM documents. This form could contain sections on some or all of the same topics as the SAICM documents, including objectives, principles, scope, policies and measures, implementation, monitoring and reporting, etc.

3.1.1.2. Addressing global mercury priorities

64. Regardless which form is used, a high-level declaration and plan of implementation for mercury could be designed to address **some or all seven of the global mercury priorities** identified in Decision 24/3 IV, Paragraph 19. In this respect, the scope of coverage could be similar or identical to that of a new international legal instrument (see Sections 3.4.1.2. and 3.4.2.2. below), though many of the commitments under the non-binding high-level declaration option would likely be less precise than under legally binding options.

3.1.1.3. Resource considerations

65. A high-level declaration and plan of implementation for mercury would probably require fairly intensive negotiations. The cost of these may be significant, though they would likely be somewhat less than negotiating a legally binding instrument. The costs of negotiating the SAICM—which included three multi-stakeholder Preparatory Committee meetings, various regional meetings, and an International Conference on Chemicals Management (ICCM)—were about US \$6.5 million.²⁹ By comparison, the costs for negotiating the Stockholm Convention, which included eight major meetings held several years earlier than the SAICM negotiations, were slightly less than US \$6 million.³⁰ (Note that these amounts do not reflect costs to hosting countries, participation costs for developed countries, the effects of inflation, nor the significant additional, post-2001 costs of UN security, which are required of all UN negotiations now, but were not required during the time of the Stockholm negotiations.)

66. Effective implementation of a non-binding mercury agreement would, like the SAICM and the Forests Agreement, require a permanent secretariat. A mercury agreement could be undertaken as part of the SAICM, in which case it could be administered by the SAICM secretariat. This would require a significant expansion of the SAICM secretariat, which, considering its present mandate, is understaffed, due to the failure of financial contributions to meet the agreed budget. Another option would be to establish a new secretariat, possibly housed within the UNEP Mercury Programme or elsewhere within UNEP. Added staff and resources would also be needed for this option.

67. Perhaps the most important factor in whether a non-binding mercury agreement may be effective would be the availability of financial resources to assist developing countries and countries with economies in transition in their implementation of the agreement and achievement of its objectives. Any agreement, whether legally binding or not, that is intended to address seriously the seven global mercury priorities will require significant resources. Like other non-binding agreements, a non-binding mercury agreement would not include a mandatory financial mechanism, as do the Stockholm and Climate Conventions and some other binding multilateral agreements. Instead, a non-legally binding mercury agreement may have a voluntary trust fund

²⁸ Adopted in April 2007 by the U.N. Forum on Forests and intended for future adoption by the U.N. General Assembly. See U.N. Econ. & Soc. Council, U.N. Forum on Forests, *Report of the Seventh Session*, 2, E/CN.18/2007/8, E/2007/42 (SUPP) (2007).

²⁹ E-mail communication with SAICM Secretariat, 7 Aug. 2007.

³⁰ See POPs INC, *Activities of the Secretariat*, *supra* note 17, at para. 12.

which, like that under the SAICM Quick Start Programme (QSP), may tend to be under-funded in light of the resources needed, and despite the generous contributions of some donor States. If the non-binding mercury agreement were administered as part of the SAICM, then it could be important to avoid the temptation of assuming that its implementation requirements could be met by relying on the QSP, because doing so could result in the QSP's already scarce resources being stretched even further. (Note that the QSP Trust Fund will continue to be open to receive voluntary contributions for only five years from when it was established in 2006.)³¹

3.1.1.4. Procedural requirements

68. The process of launching negotiations for a high-level mercury declaration and plan of implementation could begin with a decision of the UNEP Governing Council at its twenty-fifth regular session (GC-25). If the expectation of the Governing Council was for the instrument to be part of the SAICM, then the Governing Council could request the second International Conference on Chemicals Management (ICCM-2) to consider initiating negotiations to develop the non-binding agreement. ICCM-2 is, at the time of this Analysis' preparation, tentatively scheduled for May 2009, the third month following GC-25. The Governing Council request could include a suggestion that ICCM-2 initiate the negotiations with a view to completing them so that the agreement could be adopted at ICCM-3, which will take place in 2012.

69. An obvious challenge would be how, within that timeframe, to make available the funding and other resources needed to support the negotiations. These negotiations would likely require several meetings of a multi-stakeholder Preparatory Committee (PrepCom). It would be difficult for States proposing the process to make arrangements before ICCM-2 to ensure the availability of sufficient financial and other resources to support the PrepCom negotiations, partly because of the short time available, and partly because of the absence (at that stage) of an agreement by the ICCM to the proposal. However, if the mercury negotiations were to be undertaken as part of the SAICM, then it would be essential that the SAICM secretariat be supplemented to a level that would allow it to support the negotiations while continuing to serve its present functions related to administration and implementation of SAICM.

70. If it was not the wish of the Governing Council for the negotiations to be undertaken as part of the SAICM process, then the Governing Council could initiate negotiations similarly to the way it launched development of the SAICM in its Decisions SS.VII/3 and GC.22/4, by requesting the Executive Director to convene an open-ended consultative meeting involving representatives of all stakeholder groups to contribute to the development of a non-legally binding agreement and plan of implementation to address the challenges posed by mercury. Such a process would require the provision of adequate resources to support the consultative meeting(s)—including support for representatives of developing countries and, possibly, other stakeholders—and any ensuing preparatory committee meetings.

3.1.2. Mercury Code of Conduct

71. Working together, and in consultation with the private sector and other interested stakeholders, Governments could develop a non-legally binding code of conduct on mercury to establish recommended practices for addressing many of the global mercury priorities. A mercury code could be designed for use within the context of national legislation, and could also serve as a standard for corporate practice in jurisdictions where relevant national legislation may not exist. Alternatively, or in tandem with action by Governments, the private sector could broaden its

³¹ See ICCM, Resolution I/4: *Quick Start Programme*, appendix II, "Terms of Reference" (2006).

development and implementation of voluntary, industry-led codes of conduct relevant to mercury, so that these codes covered most, or even all, anthropogenic sources of mercury throughout their life cycles.

3.1.2.1. Background

72. A code of conduct is a set of rules outlining the responsibilities or proper practices of an individual or organization. Codes of conduct have been developed and adopted voluntarily by the private sector and by States in intergovernmental fora.

A. Industry codes of conduct

73. Codes of conduct may be developed in the private sector by individual companies, or by entire industries at the national, regional, or international level. Large companies with sufficient market power may require their suppliers to adhere to codes of conduct related to workers' rights, occupational safety, the toxic chemical content of materials or products, or other concerns.³²

74. On a global, industry-wide scale, the chemicals industry has developed Responsible Care, an industry performance initiative in which member companies commit to: implementing management systems; tracking performance through established environment, health, and safety measures; and extending these practices to business partners throughout the industry supply chain. The main goal of the 2004 Responsible Care Global Charter is to align global companies while providing consistency in performance reporting and a sound chemicals management system. To date there are Responsible Care programs in fifty-two countries; additionally, 123 companies with a global presence have individually committed to the Global Charter.³³

75. Depending on a member company's national trade association, its performance may be subject to verification or certification. In addition, companies participating in Responsible Care are expected to report on their Responsible Care performance, and they may be subject to sanctions (such as suspension from the association) if they fail to submit their reports. In some countries, however, such reporting may not be mandatory to participate in the Responsible Care program. While Responsible Care does not contain specific requirements on mercury, it may be used to address one or more global mercury priorities, if participating companies wish. Under its present guidelines, participating companies may include information on mercury in their national reports, especially in respect to mercury emissions to the air, mercury in wastes, and mercury content in materials.

76. The International Council on Mining and Metals (ICMM) committed its corporate members in 2003 to implement and measure their performance against ten principles of sustainable development.³⁴ In anticipation of the twenty-fourth session of the UNEP Governing Council in February 2007, the ICMM released an "ICMM Statement on Mercury," which, "[i]n accordance with the ICMM Principles and our commitment to sustainable development," committed ICMM members, *inter alia*, to quantify and minimize mercury air emissions from point sources, work to reduce and eventually eliminate their contributions to the global supply of mercury, assist in technology transfer related to the artisanal and small-scale gold mining sector, and not open mines

³² See, e.g., HP (formerly Hewlett-Packard), *HP Standard 007-2 Vendor Requirements for Hardware Recycling* (13 Apr. 2007) (stating "Vendors must understand the HP Supplier Code of Conduct (Electronic Industry Code of Conduct) and sign the Supplier Social and Environmental Responsibility Agreement").

³³ As of July 27, 2007. E-mail communication with Katy Kunzer, American Chemistry Council, Aug. 14, 2007.

³⁴ ICMM Sustainable Development Framework, *ICMM Principles* (2003).

designed for primary mercury production.³⁵ Members committed to report on these actions in compliance with applicable national standards and in accordance with their voluntary commitments to report under the Global Reporting Initiative framework.³⁶

77. It is important to note that international and national trade associations in the chemicals, mining, and manufacturing sectors are generally comprised of large companies. Thus, large companies are the most likely to subscribe to these industry-developed codes of conduct; most small to medium-sized companies do not, unless market pressures cause them to do so. Industrial sectors that are made up primarily of individuals or small enterprises working in the informal sector, such as artisanal and small-scale gold mining, may be less likely to adhere to such codes.

B. Intergovernmental codes of conduct

78. International codes of conduct have been promulgated by Governments on a wide range of issues. These non-legally binding instruments may be developed in close consultation with private entities within an industrial sector, and may be intended to serve as the basis for domestic regulation of some aspect of the industry's behavior.

79. For example, the International Code of Conduct on the Distribution and Use of Pesticides was adopted in 1985 by the Food and Agriculture Organization of the United Nations (FAO), amended in 1989, and revised to its present form in 2002. The Code "establishes voluntary standards of conduct for all public and private entities engaged in, or associated with, the distribution and use of pesticides, and since its adoption has served as the globally accepted standard for pesticide management."³⁷ The FAO Pesticides Code is "designed for use within the context of national legislation as a basis whereby government authorities, pesticide manufacturers, those engaged in trade and any citizens concerned may judge whether their proposed actions and the actions of others constitute acceptable practices."³⁸ The Code has been supplemented with an extensive set of technical guidelines for areas such as legislation, implementation, monitoring, and terminology.³⁹ The international association of pesticide manufacturers, CropLife International, has made acceptance and observance of the Code a condition for membership of its national associations.⁴⁰

80. The FAO credits its Pesticides Code with contributing to assist countries to put in place or strengthen pesticide management systems, raise awareness of the potential problems associated with pesticide use, and strengthen the involvement of NGOs and the pesticide industry in various aspects of pesticide management. Nevertheless, FAO acknowledges that major weaknesses in many aspects of pesticide management remain, predominantly in developing countries, where the problems are often related to lack of technical expertise and resources.⁴¹ Similarly to many other

³⁵ ICMM, *ICMM Statement on Mercury* (8 Feb. 2007).

³⁶ The Global Reporting Initiative is a voluntary, industry-supported effort to develop sustainability reporting guidelines for industry, containing reporting principles, reporting guidance, and standard disclosures (including performance indicators). See Global Reporting Initiative, <http://www.globalreporting.org/Home>.

³⁷ FAO, *International Code of Conduct on the Distribution and Use of Pesticides, Preface* (2002).

³⁸ *Id.* art. 1.2.

³⁹ See FAO, *FAO Guidelines on pesticide management in support of the Code of Conduct: Framework*.

⁴⁰ See FAO Conference, Thirty-first Session, *Progress in the Revision of the International Code of Conduct on the Distribution and Use of Pesticides*, C 2001/7, Introduction, para. 2 (2001).

⁴¹ See FAO, *Strategic Programme 2006-2011 for the implementation by FAO of the revised version of the International Code of Conduct on the Distribution and Use of Pesticides*, 5 (2006).

codes of conduct, the FAO Pesticides Code's voluntary provisions for monitoring, reporting, and review have been characterized as weak.⁴²

3.1.2.2. Addressing global mercury priorities

81. An international code of conduct on mercury, developed by Governments working collaboratively in an intergovernmental organization, may be most effective in influencing behaviors related to the global priorities to **reduce atmospheric mercury emissions from human sources, reduce global mercury demand related to use in products and production processes, and find environmentally sound solutions for the management of waste containing mercury and mercury compounds**. **Reducing the global mercury supply** could also be advanced, including by taking into account a hierarchy of sources, as is proposed in the ICM Statement on Mercury. A widely subscribed code of conduct could contribute to **increasing knowledge on areas such as inventories, human and environmental exposure, environmental monitoring and socio-economic impacts**. A code that contained provisions intended to facilitate technology exchange and transfer could further contribute to achieving all of the Governing Council's global priorities. Enhanced codes of conduct developed by industry could also help to address these priorities.

3.1.2.3. Resource considerations

82. The voluntary nature of codes of conduct allows them to be flexible and broad in scope. They can be designed to cover a very wide range of standards, unlike most legally binding instruments, which tend to contain a more specific range. Because they are relatively easy to amend and update, codes of conduct can be adopted in a step-wise manner and adjusted or expanded as participants gain experience and knowledge from their implementation. The adoption, periodic review, and updating of technical guidelines may also be an effective way to elaborate and supplement a code.

83. Codes of conduct developed and implemented by the private sector are, at some level, related to the belief by a company or industry that they are necessary or useful for successfully conducting business. Thus, they are undertaken as part of the costs of doing business, and do not normally exact a cost on Governments. However, the specific terms of these codes may be vague, and monitoring, reporting, and compliance may often be low, especially in developing countries.

84. As noted above, a voluntary international code of conduct may be particularly unlikely to affect practices in industrial sectors that are made up primarily of individuals or small enterprises working in the informal sector, such as artisanal and small-scale gold miners. Instead, international codes of conduct may contribute to achievement of global mercury priorities in these sectors if they contain provisions and guidance that induce participating companies to contribute their expertise in areas such as technology transfer. Where codes of conduct lead to the adoption of national regulations that include the informal sector within their scope, they have the potential to affect informal practices positively, provided that they are accompanied by sufficient political will and technical and financial resources to enable their implementation.

85. Perhaps the greatest shortcoming of a government-led, voluntary international code of conduct is that it will likely not contain provisions to ensure that adequate financial resources are

⁴² See, e.g., Michael Eddleston et al, *Pesticide Poisoning in the Developing World – A Minimum Pesticides List*, 360 THE LANCET 1163, 1165 (2002); Barbara Dinham, *The Success of a Voluntary Code in Reducing Pesticide Hazards in Developing Countries*, in GREEN GLOBE YEARBOOK 1996, 29, 31 (1996).

available for its implementation in developing countries and countries with economies in transition. Without such resources, a mercury code may stimulate many countries to adopt legislation intended to address global mercury priorities, but implementation of that legislation often may prove to be insufficient.

3.1.2.4. Procedural requirements

86. Depending on the economic sector involved and whether they were public or private initiatives, codes of conduct on mercury could be developed in numerous different fora. In respect to an intergovernmental code of conduct, the UNEP Governing Council could mandate the Executive Director, an ad hoc open-ended working group, or the UNEP Mercury Programme to initiate a process to develop a draft code in consultation with Governments, stakeholders, and relevant standard-setting organizations, such as the International Standards Organization (ISO). Technical guidelines could be developed and adopted along with the finished code, or they could be adopted at a later time by the Governing Council.

3.1.3. International Action Through Technology Transfer and Assistance, Including Partnerships

87. A strategic approach towards technology transfer and assistance to address mercury could help identify specific needs, available resources, and gaps, and could help coordinate and prioritize the provision of such assistance to enhance its effectiveness. Such an approach could draw upon activities such as: public-private partnerships, including through the ongoing effort to strengthen the UNEP Mercury Partnerships Programme; enhanced implementation of the Bali Strategic Plan for Technology Support and Capacity-building, specifically in respect to mercury; a strategic partnership on mercury between UNEP, the United Nations Development Programme (UNDP), and the GEF; and expanded GEF support for technology transfer and assistance projects related to mercury during the next GEF replenishment (GEF-5). The approach could be treated as a discrete option, or as a component of other options, such as a high-level political declaration and plan of implementation, or a comprehensive, legally binding instrument.

3.1.3.1. Background

88. For many developing countries and countries with economies in transition, difficulties in accessing innovative, environmentally sound technologies—and receiving the technical assistance needed to use those technologies effectively—may be a key impediment to addressing the challenges posed by mercury. The extent to which this is a problem will vary from issue to issue. Certainly, many of the response measures identified in Part 4 of this Analysis can be undertaken with awareness raising, changed practices, or readily available technology. Where there is an issue of technology availability, public-private partnerships and bilateral official development assistance (ODA) can contribute to a solution.

89. International technology transfer efforts related to mercury may, nonetheless, face significant barriers, including the fact that some of the technologies that developing countries may need are owned by the private sector. For example, best available and emerging technologies for emissions control devices to reduce or prevent mercury releases from coal-fired power plants and other combustion sources may not be readily available or affordable in many developing countries. Private firms have little incentive to relinquish control over such technologies at less than market prices, especially when many developing countries may have difficulty protecting the intellectual property rights that may represent a sizeable part of the technologies' financial value.

90. One way to overcome this barrier is to help firms and Governments of developing countries to pay for environmentally sound technologies through grants, concessionary loans, export credits, and guarantees.

91. Another way is to improve the conditions for foreign direct investment and market-based transfer in recipient countries by, for instance, strengthening their macroeconomic policy and governance frameworks, including intellectual property rights protections. However, such liberal measures may not be effective for the poorest countries, and whether they will be sufficient to spur technology transfer in other countries may depend on the profitability and cost-competitiveness of the individual technologies.

92. Other technologies may be inexpensive or in the public domain, yet their use may still face barriers. For example, simple, inexpensive retorts used in artisanal and small-scale gold mining (ASM) during the amalgamation process can capture and condense much of the volatilized mercury for reuse, thereby significantly reducing mercury emissions to the air. Yet many miners do not use them, because they do not know about them, they do not believe they can afford the nominal cost of buying them, or they are resistant to amalgamating their ore in a new way. These barriers can be overcome, but doing so requires education, outreach, and assistance programs that may be expensive when undertaken on a wide-spread basis.⁴³

93. Regardless what technology transfer approach is taken, facilitating it will require sufficient resources. Some of these resources may be provided under public-private mercury partnerships. Some may be provided through bilateral official development assistance (ODA). Still others may be provided by multilateral financial mechanisms, particularly the GEF, as the UNEP Governing Council anticipated in the Bali Strategic Plan for Technology Support and Capacity-building.

3.1.3.2. Mercury Partnership Programme

94. While the potential for technology transfer and assistance through partnerships is great, such activities have been limited to date under the UNEP Mercury Partnership Programme. One important pilot project that has focused on such activities has been the UNIDO Global Mercury Project, a collaboration between the GEF, UNDP, and United Nations Industrial Development Organization (UNIDO), which strives to remove barriers to the introduction of cleaner artisanal gold mining and extraction technologies.⁴⁴ The UNIDO Global Mercury Project has been supported by the “Global Partnership for Mercury Management in Artisanal and Small-Scale Gold Mining,” comprised of several developed and developing countries, intergovernmental organizations, and research laboratories.⁴⁵

95. The efforts being undertaken under Decision 24/3 IV to develop an overarching framework for the UNEP Mercury Partnership Programme may facilitate partnerships that support technology transfer and assistance. Consideration of how the Partnership Programme may fit within a strategic approach to technology transfer and assistance could lead to this important need being addressed in a comprehensive, coordinated manner.

⁴³ The UNIDO Global Mercury Project is undertaking pilot projects to address mercury use in ASM. See discussion below, Paragraph 94.

⁴⁴ See Global Mercury Project, http://www.unites.uqam.ca/gmf/intranet/gmp/index_gmp.htm.

⁴⁵ See UNEP, *Global Partnership for Mercury Management in Artisanal and Small-Scale Gold Mining* (Jan. 2007), <http://www.chem.unep.ch/mercury/GC24/Mining%20-%20January%202007.pdf>.

3.1.3.3. The Bali Strategic Plan for Technology Support and Capacity-building

96. In 1992, Agenda 21 recognized the importance of environmentally sound technologies in protecting the environment, preventing and mitigating pollution, and achieving sustainable development, and it acknowledged the need for enhanced access by developing countries to such technologies.⁴⁶ Yet despite the inclusion of technology transfer and access provisions in most major multilateral environmental agreements, significant barriers have often prevented the intentions of Agenda 21 and these MEAs from being realized. Recognizing this problem, the UNEP Governing Council at its twenty-third session adopted the Bali Strategic Plan for Technology Support and Capacity-building (Bali Strategic Plan), which includes among its objectives:

- To provide systematic, targeted, long and short-term measures for technology support and capacity-building, taking into account international agreements and based on national or regional priorities and needs;
- To enhance delivery by UNEP of technology support and capacity-building to developing countries as well as to countries with economies in transition; and
- To strengthen cooperation among UNEP, multilateral environmental agreement secretariats, and other bodies engaged in environmental capacity-building, the GEF in particular.⁴⁷

97. Also at that session, the Governing Council requested

the Executive Director to develop further the [UNEP] mercury programme . . . with the aim of facilitating and conducting technical assistance and capacity-building activities through, among other things, the Bali Strategic Plan for Technology Support and Capacity-building, in order to support the efforts of countries to take action regarding mercury pollution.⁴⁸

98. In respect to financial mechanisms, the Bali Strategic Plan reiterated calls for “a strategic partnership between UNEP and GEF [to] be developed and submitted for adoption by the Governing Council/Global Ministerial Environment Forum and the GEF Council” to further the goals of the plan.⁴⁹ That strategic partnership has not yet been finalized. In his report to the twenty-fourth session of the UNEP Governing Council on implementation of the Bali Strategic Plan, the UNEP Executive Director indicated that a partnership between the GEF, UNEP and UNDP “will be developed within the fourth phase of GEF and beyond.”⁵⁰ Prompt development and

⁴⁶ See AGENDA 21: EARTH'S ACTION PLAN, ch. 34 (1992). The need for environment-related technology support and capacity-building in developing countries as well as in countries with economies in transition had been recognized earlier in General Assembly resolutions. See UN General Assembly, *Institutional and Financial Arrangements for International Environmental Cooperation*, G.A. Res. 2997, 27th sess., U.N. Doc. A/RES/3004 (15 Dec. 1972); UN General Assembly, *Conventions and Protocols in the Field of the Environment*, G.A. Res. 3436, 30th sess. (9 Dec. 1975).

⁴⁷ UNEP Governing Council, *Bali Strategic Plan for Technology Support and Capacity-building*, UNEP/GC.23/6/Add.1, annex, para. 3 (2004). The Governing Council also stated that, in addition to GEF funding, “[i]mplementation of the plan will also depend on the mobilization of resources from other sources, including public-private partnerships. *These partnerships should complement and not replace intergovernmental commitments*” (emphasis added). *Id.* para. 36.

⁴⁸ UNEP, Decision 23/9 IV, *Chemicals management: Mercury programme*, para. 23 (2005).

⁴⁹ Bali Strategic Plan, *supra* note 47, para 35.

⁵⁰ UNEP Governing Council, *International Environmental Governance: Report of the Executive Director, Addendum, Implementation of the Bali Strategic Plan for Technology Support and Capacity-building*, paras. 67-68, UNEP/GC.24/3/Add.1 (2006). Under that partnership, UNDP would lead capacity-building support related to financial mechanisms, human resources, and technology.

agreement on such a partnership, including a specific focus on mercury, could be an important component of a comprehensive, strategic approach towards technology transfer and assistance to address mercury pollution.

3.1.3.4. Potential support from the GEF

99. The GEF's ability at the present time to support projects that address mercury-reduction technology needs may be limited, but could potentially be more significant in the future. The GEF is revising its focal area strategies to "provide the basis for a simplified approach to GEF's operational programs and strategic objectives."⁵¹ Under the cross-cutting area of sound chemicals management, the GEF would integrate sound chemicals management practices into GEF projects in the biodiversity, climate change, international waters, and land degradation focal areas, and would support management of persistent toxic substances by building upon and strengthening the general capacity of recipient countries for sound chemicals management.⁵²

100. Potentially more important from the point of view of achieving mercury reductions, Strategic Program 4 (SP-4) of the international waters focal area includes plans to "reduce releases of persistent toxic substances (PTS) to inform future GEF replenishments."⁵³ The international waters focal area was the only focal area to receive a decrease for the present fourth replenishment (GEF-4), compared to the previous GEF-3. Hence, the revised international waters strategy is more narrowly focused than in previous replenishments. Nevertheless,

a limited demonstration component beyond POPs will be supported to test effectiveness of policies, innovative instruments, and technologies for reducing releases of [persistent] toxic substances, and to engage the business community in developing solutions to demonstrate cost-effectiveness and "pollution prevention pays" strategies in support of the GEF Sound Chemicals Management Strategy. A number of economic sectors and transboundary river basins with risks from PTS or other toxic substances would be the subject of pilot demonstrations, with the results and experiences compiled for possible future GEF application.⁵⁴

101. A subsequent draft of the focal areas strategies paper, dated July 25, 2007 and subject to comments from Governments and possible further revision, more prominently highlighted the PTS component of SP-4, specified that pilot demonstrations should focus on economic sectors "especially those with mercury releases," and clarified that the lessons of these pilot demonstrations might be applied following the GEF-5 replenishment. The GEF Council is scheduled to consider final adoption of the revised focal area strategies and strategic programming for GEF-4 at its November 2007 meeting.

102. At the time this Analysis was being prepared, it was not clear to what extent the revised strategy for the international waters focal area might apply to mercury. Regardless, a potentially significant opportunity exists for the GEF to support technology transfer and assistance related to mercury during the next replenishment, which Governments may wish to consider during the

⁵¹ GEF Council, *Focal Area Strategies and Strategic Programming for GEF-4*, at 1, para. 1, GEF/C.31/10 (May 2007).

⁵² See *id.* at 91, 93. At its June 2007 meeting, the GEF Council asked the GEF Secretariat to revise the Focal Areas and Strategic Programming document in response to comments by Council Members and present the edited version for the Council's consideration at its next meeting. See GEF Council, Joint Summary of the Chairs, *Decision on Agenda Item 16: Focal area strategies and Strategic Programming for GEF-4*, at 9 (2007).

⁵³ See *Focal Area Strategies*, *supra* note 51, table 2, at 61.

⁵⁴ *Id.*, para. 45, pp. 59-60.

approaching negotiations of GEF-5. Additionally, individual donor States retain the option of directing greater amounts of their bilateral official development assistance (ODA) toward mercury reduction technologies and capacity building, in consultation with developing country partners.

3.1.3.5. Addressing global mercury priorities

103. A strategic approach towards technology transfer and assistance to address mercury could, depending on its scope and support from stakeholders, donors, and funding institutions, respond to **some or all of the global mercury priorities** identified in Decision 24/3 IV. Part of the benefit of a strategic approach is that it could help determine and address mercury priorities by, for example, ranking emissions sources on the basis of how much they contribute to the global mercury problem, and then focusing on technology transfer and assistance to address the highest ranking sources.

104. In the case of GEF support through the international waters focal area, the main focus of such support would likely be for the global priority **to reduce atmospheric mercury emissions from human sources**; however, incidental benefits toward addressing the other global priorities might also be obtained. Under the proposed cross-cutting area of sound chemicals management, the technology needs for reducing atmospheric mercury emissions might be partially met as a co-benefit of efforts the GEF may undertake in the climate change focal area in respect to fossil fuel combustion, especially coal. Similar co-benefits might be obtained from GEF support of projects under the POPs focal area that are intended to address emissions of dioxins and furans from combustion facilities. Most other global mercury priorities, however, could require GEF interventions specifically intended to address mercury.

3.1.3.6. Resource considerations

105. A strategic approach to technology transfer and assistance could help increase the effectiveness of the voluntary efforts of participants in the Mercury Partnership Programme, while also facilitating more efficient and effective use of bilateral, multilateral, and private sector assistance. In respect to GEF funding, whether UNEP or a different GEF implementing agency can or should take the lead in developing GEF technology transfer projects for mercury may depend on perceptions of the comparative advantages of the respective agencies. However, that question is relevant to implementation only; the threshold question is whether the GEF will have sufficient resources to provide adequate support for technology transfer and assistance projects on mercury without diverting resources from other pressing priorities.

106. During the present Fourth GEF Replenishment (GEF-4), available resources will be sufficient for limited pilot projects. If Governments concur that they would like the GEF to increase its support for mercury projects intended to assist in technology transfer, then donor States may wish to consider increasing the Fifth Replenishment (GEF-5) and its allocation to the international waters focal area to provide the additional resources that would be needed. Alternatively, some donor States may prefer to direct a greater share of their ODA to support such efforts, either directly or through UNEP or other appropriate agencies.

3.1.3.7. Procedural requirements

107. A strategic approach towards technology transfer and assistance to address mercury could be developed and adopted in numerous different ways. It might be undertaken as part of the further development of the UNEP Mercury Partnerships Programme. Alternatively, it might be undertaken at a broader level by the UNEP Mercury Programme, as part of a high-level political declaration and plan of implementation, or as a component of a legally binding approach to addressing

mercury. However it may be undertaken, it could seek to capitalize and build upon existing or already approved processes, including those identified in this section.

108. The UNEP Governing Council could contribute to consideration of this option by taking a decision in support of it, and by requesting the Executive Director to include support for technology transfer to address global mercury priorities within his efforts to develop a strategic partnership with the GEF. Within the GEF Council, Governments could request the GEF Secretariat to include technology transfer related to mercury in its development of strategic objectives and programs for GEF-5, which the Secretariat will begin to undertake in 2008, and which the Council is scheduled to consider at its first meeting in 2009. At the same time, Governments, especially donor States, could consider the feasibility of increasing their contributions for the next Replenishment, so that GEF-5 would have sufficient resources to support the mercury technology transfer option.

109. Irrespective of the GEF, private entities and Governments may pursue partnerships to address the mercury technology needs of developing countries. Moreover, officials in the environment and chemicals divisions of donor and recipient country partners may facilitate access to official development assistance (ODA) to support transfer of mercury-related technologies by mainstreaming the issue into their respective national development assistance and poverty reduction strategies.

3.1.4. Global Eco-Labeling and Certification Programs

110. Governments, IGOs, NGOs, and the private sector could collaborate to establish or expand the use of eco-labeling and certification programs to discourage the production, use, and emissions of mercury in products and production processes.

3.1.4.1. Background

111. Eco-labeling and certification are market-based approaches that attempt to influence the behavior of producers, retailers, and consumers to support sustainable development goals. In some cases, States may voluntarily enact legislation under which production of a specific good in their respective territories must comply with an internationally agreed standard.

A. Eco-labeling

112. Eco-labeling programs developed in response to growing awareness among many consumers that their purchasing choices can impact the environmental practices and impacts of the production and use of certain products. ISO describes eco-labeling as “a voluntary, multiple-criteria based, third party program that awards a license that authorizes the use of environmental labels on products indicating overall environmental preferability of a product within a particular product category based on life cycle considerations.”⁵⁵ Recognizing that eco-labeling can often enhance the marketability of their products, many manufacturers support and participate in these programs.

113. The integrity of eco-labeling programs derives from the credibility and transparency of the independent entities that administer them. Many of these entities are non-profit organizations, while others are established by industry. The ISO 14000 series developed various voluntary guiding principles for eco-labeling organizations. Similarly, the U.S. Environmental Protection

⁵⁵ Global Ecolabelling Network (GEN), *What is Ecolabelling?* (quoting ISO definition of eco-labeling), available at <http://www.gen.gr.jp/eco.html>.

Agency (USEPA) has issued criteria that interested parties may use to evaluate the legitimacy of independent third-party eco-labeling organizations.⁵⁶

114. Several eco-labeling standards take into account whether a production process may result in emissions of criteria pollutants, which may include mercury, or whether a product may contain toxic chemicals. Some specifically prohibit or restrict mercury. For example, the Global Ecolabelling Network (GEN), established in 1994, is an international non-profit association of “third-party, environmental performance labeling organizations” created to link eco-labeling groups in various nations and to facilitate the development of regional eco-labeling criteria. GEN has suggested to its members that they should include among their core criteria prohibitions on mercury in paints and in various computer parts. At the governmental level, the European Union (EU) has developed and adopted a region-wide eco-labeling program implemented by a board working under the European Commission and competent bodies established within each Member State. The EU criteria contain restrictions or prohibitions on numerous uses of mercury, including in light bulbs, personal computers, paints, growing media, and heat pumps.⁵⁷

B. Certification

115. Like eco-labeling, certification programs developed in response to a growing awareness that consumer choice can have an impact on both the labor practices and environmental impacts behind extraction and manufacture of materials and products. With certification, government agencies or independent third parties assure purchasers that products, production, or extraction processes comply with certain established standards, such as fair trade or environmental sustainability. The certification standards may be established by government, international organizations, or the independent third-party organization.

116. In addition to influencing the choices of end-use consumers, certification can sometimes influence the purchasing behavior of product distributors and retailers. For example, in the United States, NGO campaigns have led some major retailers of wood products to agree to market only lumber that is certified as having been sustainably produced.

117. In the area of artisanal and small-scale gold mining (ASM), the Green Gold Corporation (Corporación Oro Verde) advocates and operates a pilot certification program for sustainable gold mining in the Choco region of Colombia. A Green Gold certificate assures purchasers of raw gold or final products that the gold was produced using fair trade standards and environmentally sound practices, which require, *inter alia*, that no toxic chemicals are used in the extraction process. The Green Gold Corporation trains miners and purchases gold for use in products and jewelry. Green Gold pays a premium for gold supplied by certified miners.⁵⁸ On a global scale, Green Gold is working within the Association for Responsible Mining (ARM) to advocate ARM’s adoption of similar environmental standards.⁵⁹

118. Whereas participation in most certification programs is voluntary for all parties concerned, stronger versions can exist. The Kimberley Process Certification Scheme (KPCS) is an

⁵⁶ See U.S. Environmental Protection Agency, *Final Guidance on Environmentally Preferable Purchasing for Executive Agencies*, 64 Fed. Reg. 45,810, 45,855 (1999).

⁵⁷ European Commission, Regulation (EC) No. 1980/2000 of the European Parliament and of the Council of 17 July 2000 on a Revised Community Eco-label Award Scheme, 2000 O.J. (L 237), at 1 (2000).

⁵⁸ See Green Gold Corporation (Corporación Oro Verde), *Certified Miners Receive Higher Incomes*, available at http://www.greengold-oroverde.org/ingles/ov_impacto_ing.html.

⁵⁹ ARM is a global network founded to address the ecological and socio-economic impacts of small scale artisanal gold mining around the world. See Association for Responsible Mining, <http://www.communitymining.org>.

international governmental arrangement that was set up in response to a UN General Assembly resolution to prevent the trade in diamonds that fund conflict. Launched in January 2003, the KPCS currently has seventy-two participating countries, including all major diamond importers and exporters, and several applicants. Under the KPCS, participants agree that exporting countries will certify that shipments of rough diamonds are not conflict diamonds, importing countries will require such certification, and no participating country will conduct trade in rough diamonds with a non-participant. Countries that participate should pass legislation to enforce the KPCS minimum standards and establish control systems governing the import and export of rough diamonds. The KPCS is not legally binding and makes no provision for mandatory reporting. However, participants have established a “peer review mechanism,” which calls on Governments to share data and promotes voluntary review visits.⁶⁰

3.1.4.2. Addressing global mercury priorities

119. Enhanced eco-labeling and certification programs directed at mercury could apply to different product and process sectors and different geographic regions. At their broadest application, they could stimulate consumer demand for, and increased innovation and marketing in, mercury-free products and processes, thus helping to **reduce global mercury demand related to use in products and production processes**. This includes the potential for reduced demand related to artisanal and small-scale gold mining. By increasing demand for reduced-mercury content in products, eco-labeling and certification programs could contribute to reduced generation of wastes that contain mercury, thereby being one of the ways to **find environmentally sound solutions for the management of waste containing mercury and mercury compounds**. Moreover, by reducing global mercury use in processes and in wastes, these programs could help **reduce atmospheric mercury emissions from human sources**.

3.1.4.3. Resource considerations

120. Most eco-labeling and certification programs are developed and administered by private actors. Thus, they may place very little burden on States. However, their integrity may be significantly enhanced with active government support and participation. Intergovernmental initiatives like that undertaken by the European Union (described in Paragraph 114, above) can provide coherence of standards over a broad range of products, and certification can include trade-related benefits for the recipient (such as the automatic right to sell an eco-labeled product in any country within the respective trading block). In the case of strong versions of these programs, like the Kimberly Process, they must be negotiated and led by Governments. While these latter intergovernmental processes may be far more powerful than non-governmental initiatives, they obviously require far higher public budgetary resources.

121. The monetary costs of negotiating a strong certification program could be analogous to the negotiation costs of other multilateral agreements. Moreover, the Kimberly Process was precipitated by a consensus among Governments that trade in conflict diamonds was fomenting serious, vicious, and heavily publicized human rights abuses. Nonetheless, an innovative, global certification program that applied to the international gold market could constitute a comprehensive way to address mercury emissions from artisanal and small-scale gold mining, which is the second largest sectoral source of global mercury emissions, after those from stationary combustion facilities.

⁶⁰ Kimberley Process Certification Scheme (2002), *available at* http://www.kimberleyprocess.com/index.php?option=com_content&task=blogcategory&id=18&Itemid=35.

3.1.4.4. Procedural requirements

122. Enhanced eco-labeling and certification programs that address mercury could be initiated product-by-product, sector-by-sector, or cross-sectorally in individual countries, in regions, or globally. Because there are nearly endless possible permutations, including in respect to their potential participants, it is not possible within this Analysis to speculate upon how they might be developed.

3.1.5. Note Regarding Pollutant Release and Transfer Registers (PRTRs)

123. Pollutant release and transfer registers (PRTRs) are mechanisms to ensure the general public's "right to know"—the right to access information regarding the risks to human and environmental health from releases of toxic chemicals, including mercury. This Analysis identifies and discusses PRTRs as an option under the current provisions of an existing international legal instrument, the Kiev PRTR Protocol to the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. For a fuller discussion of PRTRs and the Kiev Protocol, please refer to Section 3.2.4 below.

124. The purpose of this note in this section is to recognize that the use of PRTRs need not be limited to countries that establish them pursuant to a legally binding multilateral agreement. Most highly developed States require industries to report on their releases and transfers of specified pollutants, and they compile that information in publicly accessible registries or inventories. They generally have taken these actions under their own initiative, not as a requirement of a multilateral treaty. Similarly, developing countries may establish their own PRTRs without first acceding to a treaty like the Kiev PRTR Protocol. The value of establishing a PRTR as a Party to the Kiev Protocol or another, similar instrument is that developing countries may thus have more ready access to the technical expertise, information exchange, and assistance of fellow Parties, which can facilitate their own successful implementation of an effective PRTR.

125. Companies that engage in activities that emit or transfer polluting substances like mercury may, on their own initiative or in partnership with others, voluntarily make information about their polluting activities publicly available. However, the disincentives for industry to do this without prodding from their Governments may be large, and the accessibility and usefulness of the information to the public may be less than when the information is submitted to, and presented in, a mandatory, standardized national registry.

3.2. Options for Approaches under the Current Provisions of Existing International Legal Instruments

126. This section identifies and describes options under binding international legal instruments that could be implemented using existing provisions of the instruments, or that could be adopted using existing provisions for managing additional substances under the instruments. The instruments include the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure, the Stockholm Convention on Persistent Organic Pollutants (POPs), and the Kiev PRTR Protocol. All of the options would utilize existing procedures and mechanisms under the respective treaties, and thus would not require the creation of any new international instruments or processes that are not already authorized under the treaties.

127. None of these approaches is likely to achieve comprehensive coverage of all seven of the global mercury priorities identified in Decision 24/3 IV. Rather, they might comprise individual components of an overall global mercury strategy. In considering whether to advocate any, some, or all of these options—and how they may compare with the options for amended or new international instruments discussed below in Sections 3.3 and 3.4—Governments may wish to take into account the likely time and costs needed to negotiate and adopt the options in light of the extent to which they may address the mercury problem (note that the Basel Convention option is already underway).

128. A brief comment at the end of the section identifies a few of the ways in which the reduction of greenhouse gas emissions under the UN Framework Convention on Climate Change and its related instruments could also help reduce risks from mercury releases.

129. An additional option that exists—but which is not developed in this Analysis—would be to utilize various existing regional chemicals, wastes, marine pollution, and environmental agreements in their present or enhanced forms to address global mercury priorities. Examples of these agreements include: regional seas agreements like the OSPAR Convention for the Protection of the Marine Environment of the Northeast Atlantic (1992), the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (1983), and the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992); transboundary wastes agreements such as the Waigani Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Wastes within the South Pacific Region (1995), and the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes (1991); and environmental agreements related to international trade, such as the North American Agreement on Environmental Cooperation (1993), a side agreement to the North American Free Trade Agreement (NAFTA).⁶¹

130. Several of these instruments already include provisions related to mercury, or they could be expanded to do so. The additional global option would be to link some or all of these regional instruments under an overarching structure so that they could be harmonized, synergies among them could be explored, gaps could be identified, they could be opened to global membership, etc. The logistical, legal, and political challenges of accomplishing these objectives could be daunting (see, e.g., discussion of UNECE LRTAP Convention and its Heavy Metals Protocol, *infra* section 3.3.2). While this option is not explored further in this Analysis, it could be the subject of intersessional study, if the OEWG desired. Parties to the individual regional agreements may also take measures, under the procedures of their respective agreements, to enhance their abilities to contribute to achievement of global mercury priorities. Moreover, they may use these regional agreements as tools for dealing with regionally specific mercury challenges.

3.2.1. Mercury Wastes under the Basel Convention

131. This section discusses the ongoing efforts of UNEP Chemicals and the Basel secretariat to undertake a work plan to develop technical mercury waste guidelines and to implement pilot projects on environmentally sound management of mercury wastes in selected countries. This initiative may be viewed as part of the Basel Convention’s “soft law” support for environmentally

⁶¹ For a discussion of these and other regional agreements within the context of chemicals management, see John Buccini, *The Global Pursuit of the Sound Management of Chemicals*, ch. 4.2 (World Bank 2004).

sound management of wastes, which is in addition to the mandatory provisions of the Convention relating to international transport of mercury wastes.

3.2.1.1. Background

132. The fundamental aims of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal are to control and reduce transboundary movements of hazardous and other wastes, prevent and minimize their generation, support the environmentally sound management of such wastes, and actively promote the transfer and use of cleaner technologies. The Basel Convention covers toxic and eco-toxic, poisonous, explosive, corrosive, flammable, and infectious wastes, including mercury. It sets up a framework for controlling the transboundary movement of hazardous wastes, allowing such movements only upon prior written notification by the State of export to the competent authorities of the States of import and transit.

133. The Convention defines “environmentally sound management” of hazardous or other wastes as “taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.”⁶² The Convention requires Parties to cooperate in developing technical guidelines to improve and achieve environmentally sound management of wastes. Over the years, a number of technical guidelines related to various kinds of wastes and waste streams have been developed to assist Parties, especially developing country Parties, in their efforts to ensure and achieve environmentally sound management of wastes. Among these is “Draft technical guidelines on the environmentally sound recycling/reclamation of metals and metal compounds (R4),” which focuses mainly on the recycling and reclamation of twelve metals and metal compounds (including mercury) that are listed in Annex I to the Basel Convention.⁶³

134. At COP 8, UNEP Chemicals asked the Basel Convention to consider including mercury and mercury waste minimization strategies among the Basel Strategic Plan focus areas, and to work closely with UNEP to develop the specific, more detailed mercury waste guidelines that numerous countries had said they needed.⁶⁴ The Conference of the Parties granted this request by including mercury wastes in the Basel Convention Technical Cooperation Trust Fund budget for the biennium 2007-08 and in the program to support the implementation of the Strategic Plan focus areas.⁶⁵ In adopting the Trust Fund budget, the COP stated that the Convention should:

In cooperation with UNEP, develop partnerships around the theme of environmentally friendly technologies and awareness raising regarding avoidance, use and disposal of mercury wastes; develop capacity-building and technical assistance programmes to reduce and prevent pollution from mercury; develop guidelines on environmentally sound management of mercury wastes with emphasis on the development of sound disposal and remediation practices.⁶⁶

⁶² BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTE AND THEIR DISPOSAL, art. 2.8, 22 March 1989.

⁶³ Conference of the Parties, Seventh Meeting, *Draft Technical Guidelines on the Environmentally Sound Recycling/reclamation of Metals and Metal Compounds (R4)*, UNEP/CHW.7/8/Add.3 (2004).

⁶⁴ Conference of the Parties, Eighth Meeting, *Mercury Waste and Basel Convention*, UNEP/CHW.8/INF/37 (2006). The Basel Strategic Plan was adopted in Conference of the Parties, Sixth Meeting, Decision VI/1, *Strategic Plan for the Implementation of the Basel Convention (to 2010)*, UNEP/CHW/.6/40 (2002).

⁶⁵ Conference of the Parties, Eighth Meeting, Decision VIII/33, *Programme and Budget for the Biennium 2007–2008*, table 5, UNEP/CHW.8/16 (2006).

⁶⁶ *Id.*, section B9, *Asbestos wastes and mercury wastes*.

135. UNEP Chemicals and the Basel secretariat subsequently agreed to a work plan in which draft texts for the technical guidelines would be developed and finalized in close consultation with the Basel Open-ended Working Group, and pilot projects on environmentally sound management of mercury wastes would be implemented in selected countries. The work plan anticipated that the draft technical guidelines would be presented for consideration by the Open-ended Working Group at its sixth meeting in September 2007.⁶⁷

3.2.1.2. Addressing global mercury priorities

136. One may anticipate that the scope of technical guidelines for the environmentally sound management of mercury wastes will include the entire life cycle of mercury from the point of generation up to final disposal. The development of comprehensive guidelines, and their subsequent implementation by Basel Convention Parties, could thus be important steps toward achieving the global mercury priorities to **find environmentally sound solutions for the management of waste containing mercury and mercury compounds** and to **find environmentally sound storage solutions for mercury**.

137. Successful implementation of comprehensive mercury waste guidelines should also help address, to varying degrees, most of the other priority areas. The application of environmentally friendly technologies and awareness-raising to mercury wastes can lead to waste avoidance through alternative technologies, cleaner production, and the reduction of mercury use in many consumer products, all of which would help **reduce global mercury demand related to use in products and production processes**. Cleaner production and alternative technologies may also help **reduce atmospheric mercury emissions from human sources**. The recovery and recycling of mercury from wastes—on an interim basis until substitutes are reasonably available—could reduce the demand for primary mercury mining and thus **reduce the global mercury supply, including by curbing primary mining and taking into account a hierarchy of sources**.

138. Moreover, the technical guidelines could facilitate the development of sound remediation practices and thus contribute to the **remediation of existing contaminated sites affecting public and environmental health**. Finally, by addressing public participation considerations such as raising awareness, information exchange, education, training, and taking part in public-private partnerships, the guidelines could contribute in part to the priority to **increase knowledge on areas such as inventories, human and environmental exposure, environmental monitoring and socio-economic impacts**.

3.2.1.3. Resource considerations

139. The development of technical guidelines related to the environmentally sound management of hazardous and other wastes is an important “soft law” function of the Basel Convention that is embedded in the treaty’s text and has long been included among its practices. Using the resources of the Convention to develop and implement mercury waste guidelines would not require the creation of any new international instruments or processes that are not already anticipated under the Convention. Moreover, the Basel Convention has considerable experience in fostering partnerships intended to facilitate the achievement of its objectives.

140. The extent to which technical guidelines on wastes containing mercury and mercury compounds are effective in helping to achieve the Governing Council’s global mercury priorities

⁶⁷ Expanded Bureau, Eighth COP Meeting, *Development of guidelines on environmentally sound management of mercury containing wastes with emphasis on the development of sound disposal and remediation practices*, UNEP/SBC/BUREAU/8/1/4 (2007).

will depend on the scope and depth of the guidelines. Moreover, their effectiveness will significantly depend on the amount of resources each country devotes to domestic implementation of the guidelines and, in turn, on the technical and financial assistance that developing country Parties receive to support their implementation. Despite significant efforts by the Basel secretariat and many Governments to broaden and increase the resource base of the Convention, the Basel Convention has consistently experienced a large shortfall in its ability to provide the financial assistance needed by many developing countries to implement their treaty commitments fully. Achieving global mercury priorities related to the management of mercury wastes will require significant financial resources that will likely not be forthcoming through the Basel Convention unless this historic pattern changes, either through the provision of much larger contributions from developed countries to the Basel Convention Technical Cooperation Trust Fund, new and considerable support from multilateral financial mechanisms, greatly enhanced partnership activities, or other means. Even without these additional resources, however, incremental progress will still be possible and desirable, for example, through targeted pilot projects.

3.2.1.4. Procedural requirements

141. As noted above, the process for developing the technical guidelines on the environmentally sound management of mercury wastes is underway. In a note to the first meeting of the COP8 Expanded Bureau, the Basel secretariat reported:

“Following COP8 decision VIII/33, UNEP Chemicals and the Secretariat of the Basel Convention initiated discussions and agreed to develop a work plan, including the formulation of specific guidelines on mercury wastes. The agreed work plan is divided into 2 components:

Component I: To develop and finalize draft texts for the technical guidelines on the Environmentally Sound Management (ESM) of mercury wastes in close consultation with the [Basel] Open-ended Working Group; and

Component II: Implementation of pilot projects on Environmentally Sound Management (ESM) of mercury wastes in selected countries.

“As for Phase I of the work plan, a draft Table of Contents for the draft Technical Guidelines for the Environmentally Sound Management of Mercury Wastes was developed and the process of selecting a team of consultants to develop the full draft technical guidelines is underway. Once developed, the draft technical guidelines will be circulated to Parties of the Basel Convention and other stakeholders for comments and the revised draft is expected to be presented for consideration by the Open-ended Working Group at its sixth meeting (OEWG6) in September 2007 in Geneva. The Open-ended Working Group is expected to establish an inter-sessional working group in order to advance this work between the OEWG6 (September 2007) and the ninth meeting of the Conference of the Parties (COP9) that will take place in 2008 for its possible adoption.

“Component II of the work plan which includes the implementation of pilot projects on the Environmentally Sound Management (ESM) of mercury wastes in selected countries, including pilot implementation of the technical guidelines on ESM of mercury waste, will be carried out subject to availability of additional financial resources.”⁶⁸

⁶⁸ *Id.* paras. 4-5.

3.2.2. International Trade in Mercury under the Rotterdam Convention

142. Parties to the Rotterdam Convention could take steps to add all uses of mercury to the Convention, so that international trade in mercury and products containing mercury would be subject to the Convention's prior informed consent procedure.

3.2.2.1. Background

143. UNEP and FAO began developing and promoting voluntary information-exchange programs on pesticides and other chemicals in the mid-1980s. The two organizations jointly introduced the voluntary prior informed consent (PIC) procedure in 1989, which provided the basis for the adoption, in 1998, of the Rotterdam Convention. The Convention has two objectives: (1) to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm; and (2) to contribute to the environmentally sound use of those chemicals by facilitating information exchange about their characteristics, providing for a national decision-making process on their import and export, and disseminating these decisions to Parties.

144. The heart of the Convention is its PIC procedure. Certain banned or severely restricted chemicals and severely hazardous pesticide formulations appear in Annex III, the "PIC list." Parties may export listed substances to other Parties only if the prospective importing Party first provides its informed consent. Exporting Parties must provide importing Parties with an export notification that includes specified information when they (or an entity in their territory) wish to export a chemical that is banned or severely restricted in their own territories, but not yet included in Annex III. Importing Parties may require additional information about the chemical related to occupational safety or environmental or human health.

145. There are thirty-nine chemicals presently listed in Annex III and subject to the PIC procedure, including twenty-four pesticides, four severely hazardous pesticide formulations, and eleven industrial chemicals. Of these, fourteen were added to Annex III after the Convention's entry into force in 2004, through the Convention's provisions for listing additional chemicals. Chemical listings apply to specific categories of use, including pesticides, severely hazardous pesticide formulations, and industrial uses. Mercury compounds intended for use as pesticides are already among the listed chemicals.⁶⁹

146. The Rotterdam Convention also contains provisions for the exchange of scientific, technical, economic, and legal information concerning chemicals within its scope. Although the Third Conference of the Parties adopted a comprehensive strategy for assisting developing countries and countries with economies in transition to secure needed financial resources for implementation of their treaty commitments, the Rotterdam Convention does not have access to a mandatory financial mechanism specifically tasked with that responsibility.⁷⁰

3.2.2.2. Adding industrial uses of mercury to the PIC list

147. The PIC Circular of June 2006 includes a notification received from Sweden, in which Sweden informed the secretariat that it had taken a final regulatory action to prohibit or severely restrict industrial uses of metallic mercury, chemical products containing mercury, and certain

⁶⁹ Listed mercury compounds include inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds. See Rotterdam Convention, annex III.

⁷⁰ See Conference of the Parties, Third Meeting, Decision RC-3/5, *Financial Mechanism*, UNEP/FAO/RC/COP.3/26 (2006).

goods or articles containing mercury.⁷¹ This notification will not trigger the Convention's procedure for adding industrial mercury to the PIC list unless and until the secretariat receives a similar notification from a Party in at least one other "prior informed consent region."⁷² If such a notification is received, then industrial mercury could qualify for addition to the PIC list.

3.2.2.3. Addressing global mercury priorities

148. The Rotterdam Convention applies to international trade in listed chemicals among Parties, for the use category specified in the listing. It does not directly restrict or prevent such trade, other than to the extent that exporting countries may allow trade in listed chemicals only if an importing country has provided its prior informed consent. Nevertheless, appearance on the PIC list tends, to varying degrees, to discourage trade in the listed chemical. Moreover, receipt of the PIC notification and the information that must precede or accompany international shipments of listed chemicals may facilitate improved management of the chemical in the importing country.

149. Because it does not directly restrict or prevent trade in listed chemicals, the PIC procedure alone cannot prevent situations in which "legitimate" trade in mercury (where the importing Party may have provided its informed consent) is diverted to other, unapproved uses. For example, in some countries mercury has for some years been imported for a reported purpose, such as dental use, and then diverted to another use, such as artisanal gold mining.⁷³ When joined with effective customs controls and internal tracking requirements, the PIC procedure may be a valuable part of an overall strategy to enable countries to regulate the import and use of mercury within their borders. As part of such a strategy, a Rotterdam listing would most effectively deter diversion if it covered *all* uses of mercury.

150. The addition of industrial uses of mercury to the PIC list could have a positive, albeit incremental, effect toward achieving the global mercury priorities identified in Decision 24/3 IV. These positive effects would apply especially to the priorities related to international trade, namely, to **reduce global mercury demand related to use in products and production processes**⁷⁴ and, to a lesser extent, to **reduce the global mercury supply**. Additionally, the informational exchange procedures of the Rotterdam Convention could help **increase knowledge** about hazards and risks related to mercury use in products and processes, even if they may contribute little to increasing knowledge in the areas specifically identified in that global priority, including inventories, human and environmental exposure, environmental monitoring, and socio-economic impacts.

3.2.2.4. Resource considerations

151. The procedures and mechanisms for adding chemicals to the PIC list comprise a core part of the Rotterdam Convention. Employing those procedures and mechanisms to list industrial uses of mercury would not require the creation of any additional international instruments or processes that are not already anticipated under the Convention.

⁷¹ See Rotterdam Convention Secretariat, *PIC Circular XXIII – June 2006*, app. I, 15 (2006).

⁷² See Rotterdam Convention, art. 5.5. The seven prior informed consent regions, established by the Conference of the Parties in Decision RC-1/2, include Africa, Asia, Europe, Latin America and the Caribbean, Near East, North America, and Southwest Pacific. See Rotterdam Convention, *PIC Regions*, available at <http://www.pic.int/home.php?type=t&id=7>.

⁷³ See UNEP Chemicals, SUMMARY OF SUPPLY, TRADE & DEMAND INFORMATION ON MERCURY 46, para. 204 (2006).

⁷⁴ Because the definition of "chemical" under the Convention includes the substance by itself or in a mixture or preparation, an Annex III listing of all uses of mercury may provide importing Parties with the authority to regulate the import of mercury-containing products. See Rotterdam Convention, art. 2(a).

152. As noted above, the Rotterdam Convention does not have a mandatory financial mechanism. To the extent that a new mercury listing might impose any additional implementation costs on developing countries, those countries could pursue financial assistance through the processes agreed in Decision RC-3/5.⁷⁵

3.2.2.5. Procedural requirements

153. The addition of industrial uses of mercury to the PIC list could be accomplished under the normal requirements of Articles 5 and 7 of the Convention. In addition to receiving Sweden's notification, the secretariat must receive from a Party in a prior informed consent region other than Europe a notification that contains the relevant information requirements. The secretariat would then forward the notifications to the Chemical Review Committee (CRC), a subsidiary body of the Convention. Unlike in the listing procedure for the Stockholm POPs Convention, the CRC does not undertake an independent assessment of the chemical. Rather, it would determine whether the notifications meet the criteria set out in the Rotterdam Convention's Annex II. Taking into account those criteria, the CRC would review the notifications and decide whether to recommend that the COP should make industrial uses of mercury subject to the PIC procedure. It should be noted that COP decisions to amend Annex III may only be taken by consensus and do not automatically follow a CRC recommendation. If the COP decided to add these uses of mercury to Annex III, then the amendment to Annex III would enter into force for all Parties on the date specified in the decision.

154. Ordinary meetings of the Rotterdam COP are now held on a two-year cycle. The next meeting, COP-4, is scheduled to take place in October 2008. Due to the procedural requirements of the Convention, the earliest that the Rotterdam COP could consider adding mercury as an industrial chemical to the Convention would be at COP-5, scheduled for late 2010.

3.2.3. Methylmercury under the Stockholm Convention

155. This section discusses the feasibility of dealing with mercury under the existing procedures and mechanisms of the Stockholm Convention, by listing methylmercury in the Convention's Annex C. Addressing the challenges posed by mercury by amending the Convention, or by adopting a mercury or metals protocol to the Convention, are discussed separately, in Sections 3.3 and 3.4.1 below.

3.2.3.1. Background

156. The Stockholm Convention on Persistent Organic Pollutants (POPs) is intended to protect human health and the environment from POPs. It contains: control measures for listed chemicals, including prohibitions or restrictions on production, use, import, and export of intentionally produced POPs; measures to reduce or eliminate releases from unintentionally produced POPs; and provisions for the treatment of POPs wastes and stockpiles. The Stockholm Convention also contains binding provisions on financial considerations, including the establishment of a financial mechanism to assist developing countries and countries with economies in transition in their implementation of the Convention.

157. The Convention presently lists twelve POPs, including pesticides, industrial chemicals, and unintentionally produced POPs. Several additional chemicals have been nominated by Parties for listing through the Convention's Article 8 process. The "Persistent Organic Pollutants Review

⁷⁵ See Decision RC-3/5, *supra* note 70.

Committee” (POPRC), a subsidiary body of the Convention, is proceeding through the step-wise requirements of Article 8, which may culminate in the Committee recommending that the Convention’s Conference of the Parties consider listing some or all of these nominated chemicals in the Convention’s annexes.

3.2.3.2. Listing methylmercury in the Stockholm Convention

158. In 1999, while the Stockholm text was being developed by an Intergovernmental Negotiating Committee (INC), the question arose whether metals such as mercury might be eligible for consideration for future listing under the Convention. Based upon recommendations of the Criteria Expert Group, the INC “agreed that organo-metallic chemicals would be considered as candidates for international action if they fulfilled the criteria set out in draft Annex D.”⁷⁶ Thus, the prevailing and most dangerous organic form of mercury, methylmercury, may be eligible for listing in the Stockholm Convention if it fulfills the Annex D criteria of persistence, bio-accumulation, potential for long-range environmental transport, and adverse effects.

159. Methylmercury is naturally produced from mercury in its elemental, ionic, or particulate forms by certain bacterial and chemical processes in the environment. Human activities that lead to releases of elemental or other forms of mercury may therefore be unintentional precursors to the natural production of methylmercury. Because methylmercury is not intentionally produced, it would be evaluated for listing in Stockholm Convention Annex C under the terms of Article 5, “measures to reduce or eliminate releases from unintentional production.” In introducing the various control measures it requires, Article 5 begins,

Each Party shall at a minimum take the following measures to reduce the total releases derived from anthropogenic sources of each of the chemicals listed in Annex C, with the goal of their continuing minimization and, where feasible, ultimate elimination . . . (emphasis added).

160. The POPRC’s ad hoc working group on perfluorooctane sulfonate has been evaluating a question—among others—that is analogous to whether methylmercury may be listed as an unintentional POP in the Stockholm Convention: whether the numerous intentionally produced chemicals that naturally break down in the environment into perfluorooctane sulfonate (PFOS) may warrant the listing of PFOS in Annex C. The working group’s “Draft Risk Management Evaluation for Perfluorooctane Sulfonate” states,

Article 5 of the Treaty does not envision “unintentional production” to include substances that are the result of non-anthropogenic transformation processes. Accordingly, listing PFOS in Annex C on the basis of it resulting from the

⁷⁶ Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants, *Report of the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants on the Work of its Third Session*, 15, para. 71, UNEP/POPS/INC.3/4 (1999). See also UNEP Global Mercury Assessment Working Group, *Stockholm Convention on Persistent Organic Pollutants and its Possible Relevance to Mercury and Mercury Compounds*, 2, para. 7, UNEP(DTIE)/GMA/WG.1/INF/3 (2002) (“It was also agreed that organo-metallic chemicals were organic chemicals and therefore fell within the scope of the future convention.”) (quoting Criteria Expert Group, UNEP/POPS/INC/CEG/2/3).

degradation of other intentionally produced chemicals may not be an appropriate exercise.⁷⁷

161. While this passage appears in a draft document that, at the time of this writing, does not necessarily represent the opinion of the POPRC, it does suggest that Article 5's application to "releases derived from anthropogenic sources of each of the chemicals listed in Annex C" may preclude listing methylmercury that is the result of non-anthropogenic transformation in the environment from elemental, ionic, or particulate releases of mercury that were intentionally or unintentionally produced through anthropogenic means.

162. Instead, only unintentional, anthropogenic releases of methylmercury (not releases of elemental mercury or other forms) would likely qualify for listing in Annex C of the Stockholm Convention. According to the UNEP Global Mercury Assessment, "anthropogenic changes in land use may result in substantial mobilization of mercury already present in the environment (originating from natural and/or anthropogenic sources). . . and apparently also in the production of methylmercury."⁷⁸ Examples of such land use changes include farming, logging, and the creation of water reservoirs. Production of methylmercury also "could likely be a general phenomenon in municipal waste landfills."⁷⁹ Additionally, methylmercury has been identified as being present in municipal sewer sludge, from which it enters the environment through the routine application of sludge to crop land.⁸⁰

3.2.3.3. Addressing global mercury priorities

163. While these sources of methylmercury may qualify for listing under Article 5 of the Convention, they would collectively respond to only a narrow subset of the seven priorities for action identified in Decision 24/3 IV. Methylmercury emissions from land use changes may be significant, but they are primarily to aquatic systems and, as such, are not among the Paragraph 19 priorities. Preventing releases of methylmercury in landfills and sewage sludge could partially address the priority to **find environmentally sound solutions for the management of waste containing mercury and mercury compounds**.

3.2.3.4. Resource considerations

164. The Article 8 procedures and mechanisms for adding other POPs have always constituted an integral part of the Stockholm Convention. Thus, utilizing Article 8 to deal with methylmercury would not require the creation of additional international instruments or processes that were not already anticipated under the Convention.

165. By listing anthropogenic sources of methylmercury in Annex C, Stockholm Convention Parties would ensure that developing countries and economies in transition could tap the resources of the Convention's financial mechanism to assist in their implementation of commitments related to the listing. Similarly, all other aspects of the Convention's infrastructure would be appropriately available to support implementation of the new listing.

⁷⁷ Persistent Organic Pollutants Review Committee, Ad Hoc Working Group on Perfluorooctane Sulfonate, *Draft Risk Management Evaluation for Perfluorooctane Sulfonate*, 24 (2007). Instead of proposing listing PFOS in Annex C, the draft concludes, "it seems most logical to regulate PFOS under the Convention as an intentionally produced POP, which should eventually be phased out. It is therefore proposed to list PFOS in Annex A or B of the Convention." *Id.*

⁷⁸ UNEP Chemicals, GLOBAL MERCURY ASSESSMENT 96, para. 466 (2002).

⁷⁹ *Id.* at 106, para. 500.

⁸⁰ Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services, TOXICOLOGICAL PROFILE FOR MERCURY 389-90 (1999).

166. The Stockholm Convention's Article 6 contains extensive provisions related to the reduction and elimination of releases from POPs stockpiles and wastes, some of which are being elaborated in cooperation with the Basel Convention. Preventing releases of methylmercury in landfills and from sewage sludge would thus be an activity that would conceptually fit within the scope of Article 6. In contrast, dealing with methylmercury releases from land use change would represent a new type of activity under the Stockholm Convention that has not been undertaken in respect to the POPs that are currently listed.

167. In evaluating whether to pursue Annex C listing of methylmercury, Stockholm Convention Parties may wish to consider that the Basel Convention, in partnership with UNEP, is currently developing technical guidelines on the environmentally sound management of mercury waste (see discussion in Section 3.2.1 above).

3.2.3.5. Procedural requirements

168. Listing methylmercury in Annex C would be accomplished under the normal requirements of Articles 8, 22, and related provisions of the Convention. A Party would submit a proposal to the secretariat, which would be forwarded to the POPRC. The POPRC would determine whether the proposal satisfied the Annex D screening criteria. Then the POPRC would sequentially prepare a risk profile and risk management evaluation. On the basis of those documents, the POPRC could decide to recommend that the chemical should be considered by the Conference of the Parties for listing. The COP would then decide whether to list it and what its control measures should be. Such a decision by the COP would be by consensus or, if consensus were not possible, by a vote of at least three-fourths of the Parties.

169. A Party may declare when ratifying the Convention that amendments to annexes A, B, or C will apply to it only if it "opts in" by affirmatively accepting the amendment.⁸¹ Except for those Parties that had made such a declaration, a methylmercury listing would apply automatically to all Parties that did not "opt-out" within one year of its adoption. For "Article 25.4" Parties, it would apply to them upon their formal ratification or acceptance of the Annex C amendment.

170. Ordinary meetings of the Stockholm COP are now held on a two-year cycle. The next meeting, COP-4, is scheduled to take place in May 2009. At the time of this writing, it is anticipated that the POPRC may complete its review of some chemicals that were nominated in 2005 for possible listing in the Convention, and may submit them for consideration by the COP at its next session in 2009. Because the COP has not yet considered any POPRC recommendations, the amendment mechanisms of the Convention have not yet been tested. The earliest likely dates that the COP could consider methylmercury if it were nominated would be 2011 or 2013.

3.2.4. Right to Know under the Aarhus Convention's Kiev PRTR Protocol

171. The Kiev Protocol on Pollutant Release and Transfer Registers (PRTR Protocol), a Protocol to the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, can serve as a legally binding means to ensure the public's right to know about releases of mercury and other pollutants from industrial sources. While the Aarhus Convention and the PRTR Protocol were developed and are administered under the United Nations Economic Commission for Europe (UNECE), they are both open to accession by any member of the United Nations. Countries outside of the UNECE region could strengthen

⁸¹ See Stockholm Convention, art. 25.4.

their citizens' ability to monitor, respond to, and possibly prevent mercury pollution by acceding to the PRTR Protocol.

3.2.4.1. Background

172. Pollutant release and transfer registers (PRTRs) are mechanisms to ensure the general public's "right to know"—the right to access information regarding the risks to human and environmental health from chemicals, including chemical accidents, manufacturing, use, and disposal. The PRTR Protocol, which has not yet entered into force, is the first legally binding international instrument on pollutant release and transfer registers. Its objective is "to enhance public access to information through the establishment of coherent, nationwide" PRTRs.⁸² The Protocol establishes minimum standards for PRTRs to which Parties must adhere, including requirements for polluters to report their environmental releases and transfers of listed substances (including mercury and its compounds) in amounts that exceed specific thresholds. By guaranteeing the public's right to know about the emissions of pollutants from industrial sites and other sources, "the protocol is expected to exert a significant downward pressure on levels of pollution, as no company will want to be identified as among the biggest polluters."⁸³

3.2.4.2. Addressing global mercury priorities

173. Participation by all States in the PRTR Protocol, regardless whether they are members of UNECE, could help achieve the global mercury priority to **increase knowledge on areas such as inventories, human and environmental exposure, environmental monitoring and socio-economic impacts**. Because PRTRs increase corporate accountability and can thus encourage improvements in environmental performance, they also may help **reduce atmospheric mercury emissions from human sources**.

3.2.4.3. Resource considerations

174. Though it has not yet entered into force, the PRTR Protocol has already been negotiated and adopted by UNECE members and therefore does not require the development costs of a new instrument. Most highly developed States already have functioning PRTRs. Within the UNECE region, the greatest value of joining the Protocol is for the accession States and those within the Commonwealth of Independent States (CIS). Because most developing countries outside the region have not established PRTRs, they, too, could benefit from acceding to, and implementing, the Protocol.

175. The reporting requirements under the PRTR Protocol would apply to a broad range of pollutants, not just mercury. The act of accession by developing countries would require them to invest the necessary resources to implement the treaty in its entirety. Neither the PRTR Protocol nor the underlying Aarhus Convention has a financial mechanism dedicated to assisting developing countries in their implementation of treaty commitments. Additionally, the effectiveness of PRTRs is predicated on the notion that making information about toxics releases available to the public will result in public pressure being applied on polluters to induce them to lower their pollution levels. Thus, PRTRs require the communication infrastructure to support the dissemination of such information, and the governance structures that allow civil society organizations and individuals to

⁸² KIEV PROTOCOL ON POLLUTANT RELEASE AND TRANSFER REGISTERS TO THE AARHUS CONVENTION ON ACCESS TO INFORMATION, PUBLIC PARTICIPATION IN DECISION-MAKING AND ACCESS TO JUSTICE IN ENVIRONMENTAL MATTERS (Kiev PRTR Protocol), art. 1 (2003, not yet entered into force).

⁸³ See Aarhus Convention, Kiev Protocol on Pollutant Release and Transfer Registers, *Objective of the Protocol*, available at <http://www.unece.org/env/pp/prtr.htm>.

express their opinions and mobilize public opinion. These may not be available in many developing countries, absent deeper structural support and reforms.

3.2.4.4. Procedural requirements

176. Any developing country that is a member of the United Nations may accede to the PRTR Protocol under its terms. To date, no non-UNECE member State has signed or acceded to either the Aarhus Convention or the PRTR Protocol.

3.2.5. Potential Synergies with the UN Framework Convention on Climate Change

177. The United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol are intended to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. These instruments address the control, reduction, and prevention of anthropogenic emissions of greenhouse gases (GHGs), including carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. They are not intended to deal with other classes of pollutants, and it is not the intention of this Analysis to suggest that the regulation of mercury under the UNFCCC is a feasible option.

178. However, there are certain mercury-reduction “co-benefits” that may be achieved through greenhouse gas mitigation,⁸⁴ and there are other areas where beneficial synergies between greenhouse gas and mercury reduction may be achieved. The purpose of this section is to identify a few of these co-benefits and synergies. As Governments simultaneously discuss how to address climate change in the period after 2012 (when the first commitment period of the Kyoto Protocol ends) and how to reduce risks from mercury, they may wish to consider actions that can help accomplish both objectives.

179. The most obvious and important co-benefit is that GHG-reduction policies that result in the combustion of less coal will also result in less atmospheric emissions of mercury. Such reductions may be accomplished through several of the response measures for reducing emissions from coal-fired power plants and burners that are identified in Part 4.1 of this Analysis, such as fuel-switching and using renewable energy sources, improving energy efficiency in products and processes, and improving energy conversion efficiency.

180. In respect to demand-side efficiency, the increased use of fluorescent lamps and high pressure mercury vapor lamps—supported through numerous Clean Development Mechanism (CDM) projects under the Kyoto Protocol—brings valuable climate benefits, but can lead to greater mercury releases into the environment due to the mercury content in the lamps. However, when the lamps are powered with electricity generated from coal, the potential mercury emissions from the lamps may be more than offset by the mercury emissions avoided by the reduced power generation. Similarly, substituting biomass for coal can prevent increases of CO₂ in the global carbon cycle and also reduce atmospheric mercury emissions, provided that the biomass feedstock has a lower mercury content than the coal it is replacing.

181. Carbon capture and sequestration (CCS) potentially promises beneficial synergies between greenhouse gas and mercury reduction strategies. CCS is an interim or possibly long-term approach to mitigating climate change by capturing carbon dioxide from large point sources such as

⁸⁴ Analogous mercury co-benefits may also be achieved under the Stockholm Convention’s existing control measures for reducing unintentional releases of dioxins and furans.

power plants and subsequently storing it, instead of releasing it into the atmosphere. Parties to the UNFCCC have asked the Global Environment Facility to consider whether carbon capture and storage would be consistent with GEF strategies and objectives.⁸⁵ Proponents of one of these technologies, integrated coal gasification combined cycle (IGCC), argue that IGCC power plants are inherently cleaner than traditional coal-fired plants, can capture carbon dioxide, and can eliminate nearly all of the plant's atmospheric mercury emissions.⁸⁶

182. Policy and decision makers may wish to discuss these issues, both in international contexts and among the different offices within their governments, to ensure that the benefits of mercury reductions are taken into account when considering strategies and instruments for mitigating greenhouse gas emissions. Such discussions may also include considerations of whether bilateral and multilateral funding to support GHG emissions reductions may be leveraged to achieve mercury reduction goals. The adoption and implementation of such synergistic approaches could contribute significantly to the global mercury priority to **reduce atmospheric mercury emissions from human sources**.

3.3. Options for Amending Existing International Legal Instruments

183. The previous section discussed options for addressing the global challenges of mercury under the present terms of existing international legal instruments. By utilizing existing procedures and mechanisms under the respective treaties, the options would not require the creation of any new international instruments or processes that are not already authorized and anticipated under the treaties. However, as noted, none of the options would lead to comprehensive coverage of all seven of the global mercury priorities identified in Decision 24/3 IV.

184. This section identifies and discusses options for amending the substantive terms of existing international legal instruments. These options could allow the global challenges posed by mercury to be addressed in a comprehensive manner, while not requiring the establishment of a wholly new legal instrument.

185. The section assumes that the most appropriate instrument to select for possible amendment may be a global chemicals treaty that already includes control measures that deal with the entire life-cycle of its covered class of substances. The treaty that meets those criteria is the Stockholm Convention. Hence, the purpose of an amendment would be to expand the coverage of the Stockholm Convention to include mercury and, possibly, other metals. Accomplishing that could, conceivably, allow all of the global mercury priorities to be addressed while utilizing the existing procedures, mechanisms, and institutions of the Stockholm Convention, including its financial mechanism.

⁸⁵ See Conference of the Parties, Decision 5/CP.11, *Additional Guidance to an Operating Entity of the Financial Mechanism*, 1, para. 3, FCCC/CP/2005/5/Add.1 (2006).

⁸⁶ See, e.g., Greg Foote, *Considering Alternatives: The Case for Limiting CO₂ Emissions From New Power Plants Through New Source Review*, 34 ENVIRONMENTAL LAW REPORTER 10642, 10660 (2004); Clean Air Task Force, *Fact Sheet: The Edwardsport IGCC Proposal: A Key Step Forward to Reducing Global Coal Impacts* (2007) (claiming proposed coal gasification power plant in Indiana would be one of the first in the United States to “capture carbon dioxide and achieve near total elimination of mercury emissions.”), available at http://www.catf.us/press_room/20070409-Edwardsport_IGCC_Proposal_Fact_Sheet.pdf.

186. An additional possible way to achieve the same objective of global participation through amendment of an existing treaty would be to open the UNECE Convention on Long-Range Transboundary Air Pollution (LRTAP) and its Heavy Metals Protocol to global participation. This option is explored in Section 3.3.2.

3.3.1. Expanding the Scope of the Stockholm Convention

187. Options for amending the Stockholm Convention must address at least two conceptual challenges. The first is the choice of legal procedure by which Parties might develop and adopt the amendment. The second is how to prevent the amendment from leading to the existence of two substantively different forms of the Convention.

3.3.1.1. Choice of legal procedure

188. Superficially, the choice of legal procedure would appear to be clear: Article 21 of the Stockholm Convention establishes specific procedures for proposing and adopting amendments to the treaty and for their entry into force. The shortcoming of these procedures—in respect to a mercury amendment—is that an amendment once adopted does not automatically apply to all Convention Parties. While such an amendment cannot enter into force until at least three-fourths of the Parties have ratified, accepted, or approved it, a substantial minority of Parties could decline to be bound by it even after it had entered into force. This minority of Parties could include major producers and consumers of mercury.⁸⁷

189. Having different countries bound by different treaty commitments would not present a peculiar legal problem: over time, not all Stockholm Parties will necessarily accept every new POPs listing that may be added to Annexes A, B, or C. Similarly, not all Governments would necessarily accept a self-standing mercury convention if one were negotiated and adopted.

190. However, the Stockholm Convention would, presumably, need fairly substantial amendments if its scope were broadened to include non-organic mercury or other persistent inorganic pollutants. Managing a Stockholm Convention that existed in two substantively different forms could be difficult for the Conference of the Parties, and could possibly lessen the effectiveness of both forms. This could be especially so in technical areas related to Article 5 (measures to reduce or eliminate releases from unintentional production) and Article 6 (measures to reduce or eliminate releases from stockpiles and wastes). Additionally, undertaking effectiveness evaluations, developing guidance for and administering the financial mechanism, and developing and administering a compliance system for a Stockholm Convention that existed in two forms could be challenging and inefficient.

3.3.1.2. Avoiding two substantively different forms of the Convention

191. These dynamics lead to the second conceptual challenge of a Stockholm mercury amendment, which is how to avoid the existence of a “split regime”—two substantively different forms of the Convention. Two basic approaches have been used and are discussed below. However, as will be shown, neither of these approaches was used in situations that apply to the

⁸⁷ Under Article 21.3, if Parties have exhausted all efforts at consensus, they may adopt an amendment by a three-fourths majority of those present and voting. Such a vote would present a high likelihood that Parties voting “against” would subsequently not ratify the amendment. Moreover, for various reasons, States frequently do not ratify international instruments even when they originally supported their adoption.

Stockholm Convention. Unless the Stockholm COP decides otherwise, the only politically feasible approach to amending the Stockholm Convention is probably under the terms of its Article 21.

192. (Theoretically, a third approach also exists: all of the Stockholm Parties could simply agree, by decision, that the Convention will include mercury. This Analysis assumes that such a possibility is exceedingly remote, in part because the constitutional systems of some Parties could preclude them from agreeing to such a substantive change to the treaty by simple decision. Similarly, if it were not possible for a three-fourths majority of Stockholm Parties to agree to the adoption of a mercury amendment, then nothing would preclude a smaller sub-set of Parties from agreeing among themselves that the Convention would include mercury. But that approach would beg the question, because it would inherently lead to two different forms of the Convention. Moreover, the political dynamics that might precipitate such an action could presage a breakdown in the relations between Parties, and could thus endanger the viability of the Stockholm Convention as a global instrument.)

A. Modification approach: MARPOL 73/78

193. In the first approach, Governments develop a second, separate instrument that contains all of the desired modifications. They then agree to adopt the original and second instruments together, so that the two are treated as a combined, single instrument. This approach was used in the development of MARPOL 73/78, where perceived problems with the original International Convention for the Prevention of Marine Pollution from Ships (MARPOL 73) led to it having received, five years after its adoption, only three ratifications and no realistic prospects for entry into force. Convening in the 1978 Conference on Tanker Safety and Pollution Prevention, Governments adopted a Protocol to the 1973 Convention, which absorbed the parent treaty and resulted in a single, combined instrument, the “International Convention for the Prevention of Marine Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto” (MARPOL 73/78).

194. Because this approach is used when a treaty has very few Parties and when its perceived deficiencies have prevented it from entering into force, the approach would likely not be a feasible tool for amending the Stockholm Convention, which does not have analogous deficiencies, has been in force since 2004, and has 147 Parties.⁸⁸

B. Interpretive agreement approach: Law of the Sea

195. In the second approach, Governments adopt an interpretive agreement, in which they all agree to treat some of the provisions of the underlying treaty in a specific way that may differ significantly from the apparent meaning of the original text. This approach was used in the 1994 “Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982” (Implementation Agreement), which modified the understanding of the deep seabed mining provisions in Part XI of the original Law of the Sea Convention.

196. Even though many countries had ratified the original Convention, very few of them were developed countries, because many of the most influential developed countries strongly opposed the terms of Part XI. Concerned that the Convention would enter into force without the participation of most donor states (who also represented the most active states in deep seabed mining initiatives), and taking into account the significant political and economic changes that had occurred in the eight years since the Convention was adopted, the UN Secretary-General launched

⁸⁸ As of July 2007.

negotiations to develop the Implementation Agreement with the hopes of achieving universal participation in the Convention.

197. The UN General Assembly adopted the Implementation Agreement several months before the Convention was scheduled to enter into force (and thus before the existing amendment procedures specified in the Convention were operative). Article 2, paragraph 1 of the Agreement states that “the provisions of this Agreement and Part XI shall be interpreted and applied together as a single instrument. In the event of any inconsistency between this Agreement and Part XI, the provisions of this Agreement shall prevail.” To facilitate acceptance of the Implementation Agreement by various groups of States, the Agreement provided numerous ways for States to express their consent to be bound, either directly or by implication.⁸⁹

198. The approach taken in the 1994 Implementation Agreement was successful because there was enough political will to find a way to bring industrialized countries into the Convention; the issue was of a sufficiently high profile to warrant the intervention of the UN Secretary-General; and the underlying Convention had not yet entered into force, thereby allowing the General Assembly effectively to modify the Convention (subject to subsequent consent by individual States) before the Convention’s amendment procedures for Part XI took effect (which could have been undertaken only by Parties to the Convention). While it may be questionable whether any of these factors would be applicable to an interpretive agreement in respect to the Stockholm Convention and mercury, the Stockholm Convention *has* entered into force, making it difficult to argue persuasively that its Article 21 amendment procedures should be bypassed by a decision of any entity other than the Convention’s Conference of the Parties.

3.3.1.3. Resource considerations

199. The primary advantage of a Stockholm Convention mercury amendment is that it would allow the institutions, procedures, and mechanisms that already exist under the Convention to be used for mercury. Because the approach would not require adoption of a new chemicals treaty, it would complement, instead of further complicate, the discussions on synergies that are now being held among the various existing conventions in the chemicals and wastes cluster.⁹⁰ An additional benefit of the approach is that it could utilize the existing financial mechanism of the Stockholm Convention. However, it would still require the GEF to revise its focal area strategies and strategic programming to more explicitly accommodate mercury projects.

200. Under a mercury amendment to the Stockholm Convention, many of the technical requirements for dealing with mercury could be placed in the Convention Annexes in which mercury was listed. There would still likely need to be many amendments made to the Convention’s body, which could result in unforeseen or unintended changes to the treaty’s POPs-related provisions. Moreover, it could be difficult, if not impossible, to limit the scope of amendment negotiations solely to mercury or PIPs; the temptation could be great for some Parties to attempt to re-negotiate existing terms of the Convention to favor more closely their current national interests.

⁸⁹ See Louis B. Sohn, *International Law Implications of the 1994 Agreement*, 88 THE AMERICAN JOURNAL OF INTERNATIONAL LAW 696, 698 (Oct. 1994).

⁹⁰ See generally, Secretariats of the Basel, Rotterdam and Stockholm Conventions, Ad Hoc Joint Working Group on Enhanced Cooperation and Coordination Between the Basel, Stockholm, and Rotterdam Conventions, at <http://ahjwg.chem.unep.ch/>.

3.3.1.4. Procedural requirements

201. The approaches of both MARPOL 73/78 and the Law of the Sea Implementation Agreement were intended to induce Governments that had not ratified the underlying instruments to join them, and they were feasible because neither of the underlying instruments that were subject to modification or interpretation had yet entered into force. Neither of these conditions applies to the Stockholm Convention. Hence, unless the Stockholm COP decides otherwise, the only politically feasible approach to amending the Stockholm Convention is probably under the terms of its Article 21. As discussed in Paragraph 188 above, this approach could result in a three-fourths majority of Parties being bound by the amended version of the Convention and the remaining Parties being bound by the original version.⁹¹

202. To undertake an amendment under Article 21, a Party to the Convention would first propose the amendment. Amendments must be adopted at a meeting of the Conference of the Parties. The secretariat would communicate the proposed amendment to the Parties (and to signatories of the Convention) at least six months before the meeting. The amendment could be adopted by consensus or, if consensus was impossible, by a three-fourths majority of Parties present and voting. The adopted amendment would enter into force for those Parties that had accepted it on the ninetieth day after the deposit of instruments of ratification, acceptance, or approval by at least three-fourths of the Parties.

203. Now that the COP is on a two-year cycle, perhaps the most optimistic timeframe for a mercury amendment that was first discussed at COP-4 (scheduled to take place in 2009) would be for it to be adopted at COP-6 (2013) and then enter into force in 2015.

3.3.2. Opening the LRTAP Convention and Its Heavy Metals Protocol to Global Participation

204. Opening the UNECE Convention on Long-Range Transboundary Air Pollution (LRTAP) and its Heavy Metals Protocol to participation beyond UNECE member states could potentially lead to a legally binding, global instrument that deals with some of the major anthropogenic sources of mercury emissions.

3.3.2.1. Background

205. The LRTAP Convention is a framework convention that is open to member States of, and States having consultative status with, the United Nations Economic Commission for Europe. LRTAP was the first international, legally binding instrument to deal with problems of air pollution on a broad regional basis. Since the Convention's entry into force in 1983, Parties have developed and adopted eight substance-specific protocols, including the 1998 Aarhus Protocol on Heavy

⁹¹ The approach used in the UNECE instruments to avoid such a split, described below in Paragraph 206, would not be applicable here. Under the UNECE instruments, which have all already entered into force, Parties have adopted amendments that would allow non-UNECE member States to request accession to the instruments. In adopting the amendments, Parties also agreed by decision that they would not consider any such requests until all UNECE member Parties had first ratified the amendments. In contrast, the Stockholm Convention contains clear provisions in its Article 21 for the adoption and entry into force of amendments to the Convention. Stockholm Parties could not, by a simple COP decision, agree that an amendment would not enter into force until all Parties had ratified it, because doing that would contradict Article 21 and amount to an amendment of its terms, without having gone through the required amendment procedures.

Metals.⁹² The Heavy Metals Protocol primarily addresses emissions of mercury, lead, and cadmium from large, stationary sources.

206. At the 23rd meeting of the Convention's Executive Body in December 2005, the question arose as to whether Parties should open membership in the Convention and its Protocols to non-UNECE member States.⁹³ The Convention's Bureau subsequently considered and prepared a note on the matter.⁹⁴ The note identified a number of legal and practical challenges to such an action. Among others, these included:

- Opening membership to a LRTAP protocol would require amending the protocol and the underlying Convention. Such an amendment could result in a “split regime” if not all Parties to the instrument in question ratified the amendment.
- Other UNECE Conventions that have decided to amend their instruments to open their memberships have addressed the “split regime” problem by agreeing not to consider or approve any request for accession by a non-UNECE member State until *all* UNECE Parties to the instrument have ratified the amended version.⁹⁵ However, very few Parties have ratified these amendments to date, and their prospects for entry into force for all UNECE Parties are in doubt.
- The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and its Kiev PRTR Protocol are both open to accession by any member of the United Nations. No non-UNECE member State has signed or acceded to either of these instruments.
- The effects-based approach, emission control options, and data and modeling requirements of the LRTAP Protocols may not be appropriate or useful for many countries outside of the UNECE region, especially if the country is surrounded by others that are not party to any such agreement.
- Financial support for participation by countries with economies in transition is provided from a LRTAP trust fund of voluntary contributions from Parties. It is unclear whether such support would be available for additional, non-UNECE countries.

3.3.2.2. Addressing global mercury priorities

207. The Aarhus Heavy Metals Protocol primarily addresses emissions of mercury from large, stationary combustion sources. As such, it could help address the major emissions sources related to the global priority to **reduce atmospheric mercury emissions from human sources**. The Protocol does not contain provisions that would address mercury use in artisanal gold mining. Because it covers waste incineration, the Protocol could also partially address the priority to **find**

⁹² See UNECE Secretariat, *Protocol on Heavy Metals*, available at http://www.unece.org/env/lrtap/hm_h1.htm.

⁹³ The question was raised by the International Union of Air Pollution Prevention Associations (IUAPPA), which suggested that opening up LRTAP might be the quickest and most effective way to develop a global air pollution treaty. See IUAPPA, *Strengthening International Co-Operation in the Abatement of Air Pollution at Regional, Hemispheric and Global Scales*, LRTAP Executive Body Informal Doc. 6 (2005).

⁹⁴ See Executive Body for the Convention on Long-Range Transboundary Air Pollution, *Possibilities for Opening the Convention*, ECE/EB.AIR/2006/8 (2006).

⁹⁵ The referenced examples included the Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991) and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992).

environmentally sound solutions for the management of waste containing mercury and mercury compounds.

208. Aside from regulation of some types of alkaline manganese batteries, the Protocol does not contain legally binding measures to reduce global mercury demand related to use in products. Instead, it contains in its Annex VII voluntary guidance to Parties on various product management measures they may wish to consider. The Protocol requires the use of best available techniques in chlor-alkali production processes.

209. The Protocol's Articles 4 and 6 contain provisions for the exchange of information and technology, and research, development, and monitoring, which could help address the global priority to **increase knowledge on areas such as inventories, human and environmental exposure, environmental monitoring and socio-economic impacts.**

3.3.2.3. Resource considerations

210. Opening the LRTAP Convention and its Heavy Metals Protocol to participation beyond UNECE member states could potentially lead to a legally binding, global instrument that deals with some of the major anthropogenic sources of mercury emissions. Because both instruments already exist and are fully operational, with a functional secretariat and full array of subsidiary bodies, they would require essentially none of the resources needed to develop and negotiate a new global mercury treaty.

211. Nevertheless, as the LRTAP Bureau expressed in its note to the Executive Body, it is not clear whether the present approach of the Convention and Protocol would be appropriate or useful for many developing or transitional countries outside of the UNECE region. Moreover, the record of other UNECE treaties that have been amended to open their membership to non-UNECE States is not encouraging. For those UNECE instruments that have always been open to such membership, no non-UNECE State has joined.

212. Finally, neither the LRTAP Convention nor its protocols has a financial mechanism intended to support developing countries in their implementation of treaty commitments. Addressing this financial resources issue would be an important consideration in any attempts to make the Heavy Metals Protocol into a truly global instrument.

3.3.2.4. Procedural requirements

213. To open up the LRTAP Convention and the Heavy Metals Protocol to global membership, each instrument would need to be amended separately. For each, a Party would need to submit the proposed amendment to the Executive Secretariat of UNECE. Consensus of the Parties would be required to adopt the amendment. To avoid the possibility of a "split regime"—in which two-thirds of the Parties ratified the amendment so that it entered into force, but the rest of the Parties did not—the Parties would need to agree that they would not consider or approve any request for accession by a non-UNECE member State until all UNECE Parties to the instrument had ratified the amended version.

214. Upon the amendment's entry into force and the ratification of the amendment by all UNECE Parties, non-UNECE States would be eligible to request accession to the Convention and Protocol.

3.4. Options for New International Legal Instruments

215. This section identifies and discusses options for new instruments that could be used to address the global challenges of mercury. For the purposes of this section, “new instruments” include protocols to existing treaties and new, self-standing treaties. For each of these options, an instrument could be designed to address all of the global mercury priorities in Decision 24/3 IV, Paragraph 19 in a comprehensive way; alternatively, it could include some or all of the priorities within its scope, and employ “step-wise” control measures that could be phased in or further developed over time. The section first discusses the option of adopting a mercury or heavy metals protocol to the Stockholm Convention and then discusses the option of a free-standing mercury or heavy metals convention.

3.4.1. Mercury Protocol to the Stockholm Convention

216. As discussed in Section 3.3 above, the option of amending the Stockholm Convention to broaden its scope to include mercury or other persistent inorganic pollutants could lead to the undesirable situations of (1) “opening up” the Convention to renegotiation, and (2) having two substantively different forms of the Convention in force at the same time. Developing and adopting a free-standing protocol to the Stockholm Convention could result in a legal instrument that comprehensively addresses mercury while avoiding those undesirable situations, and while still utilizing some of the institutions and mechanisms under the Convention that already exist.

3.4.1.1. Background

217. A protocol is a legally binding instrument that is usually, but not always, a subsidiary instrument to an existing treaty or convention. According to the United Nations Treaty Collection *Treaty Reference Guide*, “the term ‘protocol’ is used for agreements less formal than those entitled ‘treaty’ or ‘convention’ A Protocol as a supplementary treaty is an instrument which contains supplementary provisions to a previous treaty.”⁹⁶ For example, the 1967 Protocol relating to the Status of Refugees to the 1951 Convention relating to the Status of Refugees broadened the scope of the original convention.⁹⁷ By negotiating and adopting a supplementary protocol, States Parties to the original convention accomplished their policy goals without the necessity of opening up the original convention to amendment.

218. Protocols are often explicitly authorized by their parent conventions (e.g., the Kyoto Protocol to the UN Framework Convention on Climate Change was developed pursuant to UNFCCC Article 17; the Montreal Protocol on Substances that Deplete the Ozone Layer was developed pursuant to Article 8 of the Vienna Convention for the Protection of the Ozone Layer). In other situations, however, protocols are not foreseen under the terms of the parent treaty. For example, the LRTAP Convention contains no reference to the adoption of protocols, yet LRTAP Parties have developed and adopted eight substance-specific protocols, including the 1998 Aarhus Protocol on Heavy Metals.⁹⁸ Similarly, the 1972 IMO Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) did not contain provisions on the adoption of protocols, yet Parties revised and updated the Convention by adopting the more restrictive 1996

⁹⁶ United Nations Treaty Collection, “Protocols,” *Treaty Reference Guide* (1999); see also United Nations, Treaty Section of the Office of Legal Affairs, *Treaty Handbook*, 62 (2002).

⁹⁷ Office of the High Commissioner for Human Rights, *PROTOCOL RELATING TO THE STATUS OF REFUGEES* (1996).

⁹⁸ See UNECE Secretariat, *Convention on Long-range Transboundary Air Pollution, The 1979 Geneva Convention on Long-range Transboundary Air Pollution*, available at http://www.unece.org/env/lrtap/lrtap_h1.htm.

London Protocol.⁹⁹ Because the Stockholm Convention does not contain any provisions regarding the adoption of protocols, a protocol to the Stockholm Convention would be analogous to these latter precedents.

219. Some conventions require Parties to their protocols to be party also to the underlying convention, while some protocols allow “open” membership. Protocols under the UNFCCC, LRTAP, and the Vienna Ozone Convention are in the former category, while the Protocol relating to the Status of Refugees, described above, and the Kiev Protocol on Pollutant Release and Transfer Registers (PRTR Protocol) are in the latter category. Considerations as to which approach should be used may include the extent to which the protocol’s framers desire to achieve broad participation among States and the extent to which effective implementation, compliance, and governance of the protocol depends on legal commitments embedded in the parent convention.

220. As can be seen by the preceding examples, protocols may deal with a variety of subjects. What they generally all have in common is a clear conceptual connection with the objective of the parent convention. In the case of the Stockholm Convention and a possible mercury protocol, the connection is apparent: like the Stockholm Convention, a mercury protocol would serve to protect human health and the environment from persistent pollutants, and would likely do so using the same kinds of procedures and mechanisms that are already present in the Stockholm Convention. More specifically, such a protocol would allow its Parties to further the objective of the underlying Stockholm Convention by dealing with all of the anthropogenically produced precursors of the persistent *organic* pollutant, methylmercury.

3.4.1.2. Addressing global mercury priorities

221. Because the scope of a mercury protocol to the Stockholm Convention need not be defined by the Convention nor any other existing instrument, Governments would be free collectively to adopt as broad or narrow an agreement as they wished and thus could address the **full range of global priorities**. Presumably, Governments would want the protocol to include a range of activities to address the challenges posed by mercury (as is suggested in Paragraph 18 of Decision 24/3 IV), and they would want its design to take into account and respond to all of the global mercury priorities. Indeed, the most challenging question of scope may not be *whether* the protocol would address the seven global mercury priorities, but rather the *depth* of commitments it would contain to address the priorities.

222. A variety of control measures, including those identified as response measures in Part 4 of this Analysis, could be used to help achieve different strategic objectives related to each of the global priorities. Similarly to the Basel and Stockholm Conventions, some measures might include bans, restrictions (including on international trade), or other mandatory requirements; others might be more technologically or standards-based; and others might be more discretionary or aspirational. In some areas, for example mercury emissions from coal-fired power plants, specific requirements might need to be defined or phased in over a significant period of time. As is usually the case, agreement on the depth of commitments, including the timeframe in which they would be implemented, would depend on factors like political will, perceptions of technical feasibility, and the expectations and assurances of Governments as to the availability of necessary financial resources and assistance.

⁹⁹ CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER (London Convention), 1972; 1996 PROTOCOL TO THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER (London Protocol).

223. Governments might find it advisable to include within the protocol comprehensive provisions on mercury wastes as well as strong linkages to related activities and processes under the Basel Convention, in an analogous manner to the way in which the Stockholm Convention deals with POPs wastes.¹⁰⁰

3.4.1.3. Resource considerations

224. The primary advantage of a Stockholm Convention mercury protocol, compared to a discrete, free-standing mercury convention, is that the protocol could utilize and build on many of the institutions, procedures, and mechanisms that already exist under the Stockholm Convention. Even though the protocol would be a legally distinct treaty, it would likely require fewer resources—and would contribute less to “treaty congestion” and fragmentation within the chemicals and wastes cluster—than would an independent mercury convention. Accordingly, the protocol approach might complement, instead of further complicate, the discussions on synergies that are now being held among the various existing conventions in the chemicals and wastes cluster.¹⁰¹

225. The relationship of the Stockholm Conference of the Parties to the protocol would depend in part on the extent to which commitments under the protocol might be linked with those in the Convention. In the case of the LRTAP Convention and its protocols, there is a high degree of integration. Only Parties to a given LRTAP protocol may take part in decision-making under a protocol, so a protocol non-Party may not block consensus in respect to a protocol decision. Nevertheless, the Convention’s Executive Body, comprised of all Parties to the Convention, has an active managerial and oversight role, including over all of the subsidiary bodies.

226. In contrast, a “Conference of the Parties serving as the meeting of the Parties” (COP/MOP) may be functionally more distinct from its respective convention COP. This can occur especially when one or more members of the COP may oppose the protocol and may require that the functions (and operating costs) of the COP and COP/MOP be strictly segregated. Regardless, meetings of the two entities are generally held concurrently in the same venue, which allows significant savings in time and money, compared to the two meetings being held separately. As in most other convention-protocol arrangements, the secretariat of the Stockholm Convention could also serve as the secretariat to a mercury protocol.

227. If the protocol was intended potentially to include other metals in addition to mercury (as is the situation under the Stockholm Convention in respect to additional POPs), then the Stockholm POPRC could serve both the protocol and the Convention in the event an additional metal was nominated for coverage under the protocol. If that occurred, the POPRC could appoint an ad hoc working group to undertake much of the evaluation for a nominated metal, in the same manner that it already appoints such working groups to develop the various drafts required under the Stockholm Article 8 procedure for nominated POPs. If procedures and mechanisms related to non-compliance are ever adopted by the Stockholm COP pursuant to Article 17, they could also be used for the protocol.

228. Some treaty requirements, such as reporting, could probably be combined to some extent for both instruments, thereby alleviating some of the compliance burden that Parties might be subjected to under two entirely separate conventions. Additional overlaps or synergies might be possible in

¹⁰⁰ See Stockholm Convention, art. 6 and annex C. For a discussion of the pending Basel guidelines on mercury wastes, see “Mercury Wastes under the Basel Convention,” *supra* section 3.2.1.

¹⁰¹ See *supra*, note 90.

such areas as national implementation plans; information exchange; public information, awareness, and education; and research, development, and assistance.

229. An additional, key benefit of using the protocol approach is that a mercury protocol would likely be able to utilize the existing financial mechanism of the Stockholm Convention. The Cartagena Biosafety Protocol to the Convention on Biological Diversity provides a relevant precedent. Under the Biosafety Protocol, the “financial mechanism established in Article 21 of the Convention shall, through the institutional structure entrusted with its operation, be the financial mechanism for this Protocol.”¹⁰² In May 2003, the Council of the Global Environment Facility approved capacity building for implementation of the Biosafety Protocol as a strategic priority of the GEF Biodiversity Program.¹⁰³ Thus, the Biosafety Protocol’s access to GEF funds required neither a new memorandum of understanding with the GEF Council nor an amendment of the GEF Instrument. The Protocol’s COP/MOP forwards its financial mechanism guidance to the Convention COP, which in turn includes it as part of its own guidance to the GEF.

230. A similar arrangement could be made for a mercury protocol under the Stockholm Convention. Nevertheless, it is important to bear in mind that access to GEF funding through the Stockholm financial mechanism would not ensure that funding for implementation activities under the protocol would be adequate. That would depend on the amount of future GEF replenishments and their allocation between the various GEF focal areas and strategic programs.

3.4.1.4. Procedural requirements

231. As the supreme body of the Convention, the Stockholm Conference of the Parties holds the exclusive power to decide whether to initiate negotiations that might lead to the eventual adoption of a mercury protocol to the Stockholm Convention. Unless the COP decided otherwise, such negotiations would take place under the authority of the Convention, not the UNEP Governing Council. Now that the COP is meeting on a biennial schedule, the closest realistic opportunity for it to consider the matter would be in May 2009 at COP-4. That meeting will occur in the third month following the Governing Council’s twenty-fifth regular session, where the Governing Council is scheduled to consider the outcomes of the work of the ad hoc OEWG with a view to taking a decision on the OEWG’s final report.¹⁰⁴ Thus, if the Governing Council decided at its twenty-fifth meeting to request the Stockholm Conference of the Parties to consider initiating discussions to develop a protocol on mercury, the COP could do so soon thereafter.

232. As noted earlier in this discussion, the Stockholm Convention contains no provisions in respect to the adoption of protocols. The procedures of Article 21 (amendments to the Convention) would not apply, because adoption of a protocol would be undertaken specifically to avoid the amendment process, and because a protocol would not alter the Convention and thus would not be equivalent to an amendment. In the absence of the COP adopting any specific rules in this regard, consideration and possible adoption of a mercury protocol would be undertaken by the COP pursuant to the Convention’s ordinary rules of procedure regarding meetings and decision-making.¹⁰⁵

¹⁰² CARTAGENA PROTOCOL ON BIOSAFETY TO THE CONVENTION ON BIOLOGICAL DIVERSITY, art. 28.2, 29 Jan. 2000.

¹⁰³ See GEF Council, *Joint Summary of the Chairs, GEF Council Meeting, May 14-16, 2003*, para. 9.

¹⁰⁴ See Decision 24/3 IV, para. 34.

¹⁰⁵ See Conference of the Parties, *Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the Work of its First Meeting*, Decision SC-1/1, Rules of Procedure, Annex I, UNEP/POPS/COP.1/31 (2005).

233. To place the question of a mercury protocol on the COP-4 agenda, a Party would need to propose the item to the secretariat, usually six weeks before the beginning of the meeting. In preparing for COP-4, an important consideration for Governments would be to ensure that their delegations contained not only experts on POPs and the Stockholm Convention, but also experts on mercury and metals.

234. Depending on its preferences, the COP could establish a subsidiary body, such as an open-ended working group, to deal with the issue intersessionally. In addition, or alternatively, a Party could call for the COP to work on the matter in an extraordinary meeting to be held between COP-4 and COP-5 (which will be two years after COP-4). An extraordinary COP meeting could occur if at least one third of Parties supported it.

235. Stockholm Convention observers, including non-Party States, would ordinarily be allowed to participate in discussions pertaining to the protocol within working groups and, to a lesser extent, plenary sessions of the COP. However, only Stockholm Parties would be permitted to participate in formal negotiations and decision-making, unless the COP agreed to different rules of procedure.

236. If and when the COP decided to adopt a protocol, it would be required to do so by consensus, unless the COP first decides (by consensus) on another procedure, e.g., to adopt the second, bracketed sentence of Rule 45, which would permit decisions to be taken on substantive matters by a two-thirds majority vote if consensus proves not to be possible.¹⁰⁶ The protocol would enter into force under its own terms. As discussed above, it could be open for signature and ratification to Stockholm Parties only, or to any State.

3.4.1.5. Legal authority

237. The Stockholm COP would derive its authority to consider and adopt a mercury protocol from Article 19.5(d) of the Convention:

The Conference of the Parties shall . . . perform the functions assigned to it by the Convention and, to this end, shall . . . (d) Consider and undertake any additional action that may be required for the achievement of the objectives of the Convention.

238. Thus, the COP would be within its mandate to adopt a mercury protocol provided that it believed that doing so was necessary to advance achievement of the objectives of the Convention.

239. Under Article 1, the objective of the Convention is “to protect human health and the environment from persistent organic pollutants.” As noted above in Section 3.2.3, methylmercury is a persistent organic pollutant produced naturally in the environment from mercury that is emitted from anthropogenic and other sources. Protecting human health and the environment from methylmercury requires addressing all anthropogenic sources of mercury, yet anthropogenic emissions of mercury in its non-organic forms may not be covered by the Stockholm Convention as it presently exists. Thus, if the COP believed it was necessary to achieve the Convention’s objective of protecting human health and the environment from the persistent organic pollutant methylmercury, the COP would have the authority to undertake the development and adoption of an instrument (e.g., a protocol) that could include all forms of mercury within its scope.

¹⁰⁶ See *id.*, rule 45.

3.4.2. Free-Standing Mercury Convention

240. Like the protocol option discussed above, an independent, free-standing mercury convention could have a scope as broad or narrow, and commitments as deep or shallow, as Governments agreed. The main contrasts with the protocol option are that, in a free-standing convention, negotiations would be launched under UNEP Governing Council processes rather than the Stockholm Convention, there would likely be fewer opportunities to utilize mechanisms and institutions of existing agreements, and the costs of supporting the convention could thus be higher. However, the much more substantial costs of implementing the convention domestically would likely not be significantly different from those under the Stockholm protocol option.

3.4.2.1. Background

241. A free-standing mercury convention could take either of two basic approaches: a *framework/protocol approach*, or a *control measures approach*. States could design either approach to deal with mercury only, or mercury and other persistent inorganic pollutants.

A. Framework/protocol approach

242. Under a framework/protocol approach, States begin with a framework convention that creates a general system of governance for dealing with a problem. The framework convention establishes basic treaty institutions and decision-making mechanisms, rather than focusing on specific obligations. Parties then develop specific obligations or control measures later, in one or more protocols to the framework convention. Because the framework/protocol approach is an incremental one, it can be useful when political consensus to take strong substantive measures is lacking, scientific understanding is still evolving, or the problem being addressed is changeable.¹⁰⁷ Prominent framework conventions (and their subsequent protocols) include, among others, the 1985 Vienna Convention for the Protection of the Ozone Layer (Montreal Protocol, including numerous amendments and adjustments), the 1979 UNECE Convention on Long-range Transboundary Air Pollution (LRTAP) (eight protocols), the 1992 UN Framework Convention on Climate Change (UNFCCC) (Kyoto Protocol), and the 2003 WHO Framework Convention on Tobacco Control (FCTC) (no protocols at this time).

243. In the context of mercury, States could adopt a framework convention that would establish an objective and principles and general obligations relating to: the need to take national and international measures to combat mercury pollution; education, training, and public awareness; cooperation in scientific research; reporting; and financial assistance. The framework convention would also establish: necessary treaty institutions, such as a Conference of the Parties, secretariat, subsidiary bodies, and a financial mechanism; implementation mechanisms, including reporting, monitoring, and dispute resolution; and decision-making procedures for the adoption of amendments and protocols.¹⁰⁸

244. After the adoption and entry into force of the mercury framework convention, Parties could negotiate and adopt one or more protocols, each dealing with one or more global mercury priorities and strategic objectives. If Parties wished, they could also adopt protocols to cover other persistent inorganic pollutants.

¹⁰⁷ See Daniel Bodansky, *The Framework Convention/Protocol Approach*, 17, WHO FCTC Technical Briefing Series, WHO/NCD/TFI/99.1 (1999).

¹⁰⁸ See *id.* at 19-29.

B. Control measures approach

245. Within the chemicals and wastes cluster, the Stockholm, Rotterdam, and Basel Conventions all serve as examples of the control measures approach. Each of these three instruments establishes all, or most, of the treaty elements identified in Paragraph 243 above. Similarly to the Montreal Protocol, each also contains specific control measures, followed by annexes that specify the substances and usages that are subject to those control measures.

246. Under this approach, a mercury convention could include control measures dealing fully with all of the global mercury problems and strategic objectives. Like the Stockholm Convention, these control measures could cover the broad areas of intentional production and use (including international trade), unintentional production, and measures to reduce or eliminate releases from stockpiles and wastes. Alternatively, the treaty could contain one or more annexes that could list the specific mercury uses or emissions sources to which the control measures would apply, including targets and timetables for their implementation. This latter approach would lend itself to a more gradual or incremental application of the treaty's control measures, and could be well-suited for those strategic objectives that may be especially challenging to address on a global level, such as reducing mercury emissions from coal-fired power plants. It would require inclusion of procedures and mechanisms to nominate, evaluate, and add additional mercury uses or sources to the annexes and, possibly, expedited procedures to adjust any reduction targets or timetables.

247. An additional variation of the control measures approach is that it can contain different compliance timetables for developed and developing country Parties, as does Article 5 of the Montreal Protocol.

248. A convention using the control measures approach could cover mercury only. Alternatively, the INC could follow the Stockholm and Rotterdam Convention examples and include procedures for nominating, evaluating, and adding other persistent inorganic pollutants, provided that the Governing Council mandated the INC to take that approach. In that case, the convention would appropriately include provisions for a subsidiary body, similar to the Stockholm POPRC, that could undertake the necessary evaluations and analysis and make recommendations to the convention's Conference of the Parties. The convention would also require annexes for listing regulated substances and outlining informational requirements for areas such as screening criteria, risk profiles, and socio-economic considerations.

3.4.2.2. Addressing global mercury priorities

249. As in the Stockholm mercury protocol option, a free-standing mercury convention could be designed to address the **full range of global priorities** using a variety of mandatory and discretionary measures, as well as phased-in implementation schedules and, for some areas, "placeholders" for the development of future standards and measures.

250. Presumably, Governments would want the convention to include a range of activities to address the challenges posed by mercury (as is suggested in Decision 24/3 IV, Paragraph 18), and they would want its design to take into account and respond to all of the global mercury priorities. As would be the case with a Stockholm mercury protocol, the most challenging question of scope may be the *depth* of commitments the convention would contain to address the priorities.

251. A variety of control measures, including the response measures identified in Part 4 of this Analysis, could be used to help achieve different strategic objectives related to each of the global priorities. Similarly to the Basel and Stockholm Conventions, some measures might include bans, restrictions (including on international trade), or other mandatory requirements; others might be

more technologically or standards-based; and others might be more discretionary or aspirational. In some areas, for example mercury emissions from coal-fired power plants, specific requirements might need to be defined or phased in over a significant period of time. As is usually the case, agreement on the depth of commitments, including the timeframe in which they would be implemented, would depend on factors like political will, perceptions of technical feasibility, and the expectations and assurances of Governments as to the availability of necessary financial resources and assistance.

252. Governments might find it advisable to include within the convention comprehensive provisions on mercury wastes as well as strong linkages to related activities and processes under the Basel Convention, in an analogous manner to the way in which the Stockholm Convention deals with POPs wastes.¹⁰⁹

3.4.2.3. Resource considerations

253. From the point of view of some Governments, the main drawback of the free-standing convention option for mercury could be that it would likely forego many or all of the institutional and procedural overlaps identified for the Stockholm protocol option in Section 3.4.1.3. above. Without those overlaps, the costs of administrative and institutional support for a mercury convention could be higher than for a protocol. This problem might be alleviated to a certain extent depending on the outcomes of the ongoing discussions on synergies among the various agreements within the chemicals and wastes cluster. Thus, it could be useful for negotiations on a mercury convention, if any, to be undertaken in close coordination with those synergies discussions.

254. A free-standing convention would need to have its own Conference of the Parties, rather than the overlapping COP/MOP that would be possible under the protocol option. It would also need its own secretariat, unless arrangements for a “co-secretariat” could be worked out with another convention. While nothing would prohibit the development of synergies with other conventions in such areas as country reporting, national implementation plans, information exchange, public information, and research, it could prove difficult in practice to do so.

255. An additional important difference between the free-standing convention and protocol options is the availability of a financial mechanism. A mercury convention would likely not be successful—nor would it be politically feasible from the point of view of many developing countries—without a dedicated channel to provide developing countries with the financial assistance they may need to implement their commitments under the convention. Thus, a mercury convention would likely need to have its own financial mechanism. Assuming that the financial mechanism would be operated by the GEF, the convention’s Conference of the Parties and the GEF Council would need to execute a memorandum of understanding between themselves, and the GEF Assembly would need to adopt an amendment of the GEF Instrument to allow the GEF to operate the new convention’s financial mechanism.

256. For both the protocol and free-standing convention options, but especially for the latter option, it may be incumbent for proponents of either binding instrument to demonstrate that they understand, and are willing to respond to, the technical capacity and financial resource needs of developing countries concerned about their ability to negotiate and implement an additional chemicals treaty.

¹⁰⁹ See Stockholm Convention, art. 6 and annex C. For a discussion of the pending Basel guidelines on mercury wastes, see “Mercury Wastes under the Basel Convention,” *supra* section 3.2.1.

3.4.2.4. Procedural requirements

257. To launch negotiations on a free-standing mercury convention, the UNEP Governing Council would adopt a decision in which it requested the Executive Director to prepare for and convene an intergovernmental negotiating committee (INC) mandated to prepare an internationally binding instrument to address the global challenges posed by mercury. The decision could define the scope and content of the instrument, including whether it was to take a framework/protocol or control measures approach. The decision could establish approximate dates by when the INC would be expected to commence its work and when a diplomatic conference would be expected to adopt the completed instrument (in the case of the Stockholm Convention, the INC was requested to begin in early 1998 and the diplomatic conference was requested to conclude the treaty “by the year 2000”).¹¹⁰ The decision might also instruct UNEP to take steps to initiate immediate actions on mercury to help address the mercury problem during the period when the binding instrument was being developed, and to prepare for the instrument’s implementation.

258. INCs and diplomatic conferences operate under their own rules of procedure, which usually provide that substantive decisions shall be taken by consensus or by a two-thirds majority of States present and voting if consensus is not possible.¹¹¹ After the treaty was adopted by the diplomatic conference, it would enter into force under its own terms. The length of time required for such instruments to be negotiated and to enter into force can vary significantly. The UNFCCC was adopted less than 18 months after the initiation of negotiations in 1990, and it entered into force less than two years later. The first UNFCCC COP in 1995 decided to launch new talks to strengthen the Convention, which led to adoption of the Kyoto Protocol in December 1997. However, due to the complex, novel mechanisms in the Protocol and the political difficulties in achieving agreement on how those mechanisms would be implemented, the Kyoto Protocol did not enter into force until 2005. In comparison, the total time between the first INC for the Stockholm Convention and its entry into force was slightly less than six years.

4. RESPONSE MEASURES AND STRATEGIES

259. This Part identifies available response measures and strategies for achieving the seven global mercury priorities.¹¹² The information is presented in seven tables (one for each global priority). Each table includes two or more strategic objectives related to achieving the featured priority, and several possible response measures that may contribute to achieving each of those strategic objectives. The tables are intended to provide the ad hoc OEWG with a useful, readily available compilation of actions that stakeholders might take to address a particular aspect of the mercury problem. OEWG members may wish to consider this information as they examine the feasibility

¹¹⁰ See UNEP Governing Council, Decision 19/13C, paras. 11-12 (1999). In fact, the INC completed its negotiations in December 2000 and the diplomatic conference took place in Stockholm in May 2001.

¹¹¹ See, e.g., Stockholm INC, Rule of Procedure 37, in Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants, *Report of the Intergovernmental Negotiating Committee on the Work of Its First Session*, UNEP/POPS/INC.1/7, annex I, “Rules of Procedure for the Meetings of the Intergovernmental Negotiating Committee” (1998) (applied *mutatis mutandis* to diplomatic conference in Conference of Plenipotentiaries on the Stockholm Convention on Persistent Organic Pollutants Stockholm, *Final Act*, UNEP/POPS/CONF/4 (2001)); see also United Nations General Assembly, VIENNA CONVENTION ON THE LAW OF TREATIES, art. 9.2, May 22, 1969, 1155 United Nations Treaty Series 331 (stating adoption of treaty text at an international conference takes place by vote of two-thirds of States present and voting, unless by same majority they decide to apply different rule).

¹¹² The seven global priorities are listed in the Introduction to this Analysis, Paragraph 2.

and effectiveness of the voluntary and legally binding approaches discussed in Part 3 of this Analysis.

260. The primary sources for the information included in the tables were: UNEP, *Guide for Reducing Major Uses and Releases of Mercury* (2006); UNEP, *Summary of Supply, Trade and Demand Information on Mercury* (2006); UNEP, *Toolkit for Identification and Quantification of Mercury Releases* (2005); UNEP, *Global Mercury Assessment Report* (2002); and U.S. Environmental Protection Agency, *Mercury Study Report to Congress*, EPA-452/R-97-003 (1997).

4.1. REDUCE ATMOSPHERIC EMISSIONS OF MERCURY FROM HUMAN SOURCES

Strategic Objective	Available Response Measures
1. Reduce mercury emissions from coal usage	<ul style="list-style-type: none"> (a) establish mercury emissions reduction targets and timetables (b) improve energy efficiency in products and processes to lessen demand for electricity and need to combust coal in electricity generation (c) improve energy conversion efficiency to reduce coal combustion (d) transition to other energy sources (e.g. renewables) to reduce coal combustion (e) pre-treat coal before combustion to reduce mercury in flue gas emissions (f) increase the use of high rank coals to decrease mercury emissions (g) establish mercury-specific BAT standards for emissions control devices to capture mercury particles in flue gas (h) use air pollution control technologies for other criteria pollutants to capture mercury in flue gas
2. Reduce mercury emissions from artisanal and small-scale gold mining (ASM)	<ul style="list-style-type: none"> (a) eliminate whole-ore amalgamation by introducing methods and educating miners to use mercury-free concentration prior to amalgamation (b) reduce mercury losses during amalgamation of concentrates and when condensing gold from amalgam by introducing better Hg capture and recycling processes, including the use of retorts (c) support municipal or privately owned amalgamation centers where miners can bring gold ore for closed loop mercury amalgamation by technicians with proper controls (d) introduce mercury-free mining practices where practical, particularly where ore concentration could preclude mercury use (e) train and raise awareness among miners and local gold shop owners and operators to inform them of dangers surrounding mercury use and available mercury-free alternatives (f) introduce micro-credit programs to facilitate ability of poor miners to purchase cleaner technologies (g) raise awareness among gold consumers about environmental risks of ASM (h) increase "green gold" marketing and develop methods to identify sustainably mined gold
3. Reduce mercury emissions from industrial processes, including use as a catalyst, byproduct production, contamination of component materials, and heat production	<ul style="list-style-type: none"> (a) phase out industrial processes based on mercury catalysts (chlor-alkali and vinyl chloride monomer production) (b) use low-mercury limestone and coal feedstocks (c) use low-mercury alternatives to coal, such as natural gas and petroleum coke, to generate power during production processes (d) require leak detection and monitoring equipment (e) use existing control techniques and devices such as gas stream cooling, activated carbon absorbers, scrubbers, and mist eliminators to reduce mercury releases to air during manufacturing processes (f) require facilities to treat flue gas with activated carbon filters and BAT controls (g) recover mercury present in filters and wastewater from catalysts used in processes and from residual sludge; remove to sound terminal storage (h) require mercury-specific controls and separation processes to remove mercury vaporized during sintering or roasting (i) leach mercury out of ores prior to sintering (j) choose biomass fuels with lowest concentration of mercury

4.2. FIND ENVIRONMENTALLY SOUND SOLUTIONS FOR THE MANAGEMENT OF WASTE CONTAINING MERCURY AND MERCURY COMPOUNDS

Strategic Objective	Available Response Measures
1. Reduce generation of wastes that contain mercury	<ul style="list-style-type: none"> (a) substitute alternative products and processes for those using or containing mercury (b) promote recovery of mercury from waste products and sludge through, e.g., retort and distillation followed by sound terminal storage (c) use wastes with relatively low, stable mercury content as feedstock for other processes, e.g., fly ash for cement production (d) use mercury-free dental amalgams, such as composites, gallium, or cold silver amalgams
2. Promote separate collection and treatment of mercury-containing wastes	<ul style="list-style-type: none"> (a) develop labeling requirements for all mercury-containing products to alert consumers to mercury content (b) ban the disposal in general waste stream of products that contain mercury by designating mercury and mercury-containing wastes, compounds and products as hazardous wastes (c) install amalgam filters, traps and removal systems in dental sinks and drains to prevent mercury from entering wastewater and sewer lines (d) increase vendor knowledge of mercury-containing products and wastes and proper methods for their disposal (e) require vendors of mercury-containing products to "take back" and properly dispose or recycle products after their useful life (f) develop programs to create easily accessible mercury product collection centers for consumers and medical centers (g) develop interim storage guidelines for collection centers of mercury-containing products regarding collection and transportation to final disposal or recycling facilities (h) require mercury gathered at dental clinics to be disposed of in terminal storage facilities (i) establish criteria and thresholds for defining or characterizing mercury-containing wastes as hazardous wastes; develop hazardous waste management guidelines for these wastes
3. Reduce mercury emissions to air from medical, municipal, and hazardous waste incinerators and reduce migration and emission of mercury from landfills	<ul style="list-style-type: none"> (a) eliminate mercury as completely as possible from waste stream (b) sort wastes to reduce mercury content prior to incineration or landfill (c) levy disposal and production fees on products that contain mercury to encourage reduction in their use (d) prevent combustion of wastes with high mercury concentrations (e) implement mercury-specific BAT controls and use existing air pollution control devices to reduce mercury content in flue gas and emissions (f) establish waste management guidelines, including leachate collection and treatment technologies, for terminal storage and disposal of mercury-containing wastes in hazardous waste landfills (g) monitor and collect leachate from general landfills and introduce wastewater cleansing processes to remove mercury (h) discard mercury and wastes containing mercury in environmentally sound terminal storage facilities (i) rapidly cover or seal working surfaces of landfills with soil to prevent evaporation and direct release of mercury to atmosphere (j) require regular landfill inspections and employee training (k) create disincentives for poor landfill management by establishing comprehensive liability and compensation rules

4.3. REDUCE GLOBAL MERCURY DEMAND RELATED TO USE IN PRODUCTS AND PRODUCTION PROCESSES

Strategic Objective	Available Response Measures
1. Reduce mercury use in artisanal and small-scale gold mining (ASM)	<ul style="list-style-type: none"> (a) eliminate whole-ore amalgamation by introducing methods and educating miners to implement mercury-free concentration prior to amalgamation (b) reduce mercury losses during amalgamation of concentrates and when condensing gold from amalgam by introducing better Hg capture and recycling processes, including the use of retorts (c) introduce mercury-free mining practices where practical, particularly where ore concentration could preclude mercury use (d) train and raise awareness among miners and local gold shop owners and operators to inform them of dangers surrounding mercury use and available mercury-free alternatives (e) introduce micro-credit programs to facilitate ability of poor miners to purchase cleaner technologies (f) raise awareness among gold consumers about environmental risks of ASM (g) increase "green gold" marketing and develop methods to identify sustainably mined gold
2. Reduce mercury consumption in vinyl chloride monomer (VCM) and chlor-alkali production	<ul style="list-style-type: none"> (a) transition from acetylene mercuric chloride catalyst process to mercury-free oxychlorination of ethylene process, which is available and technically and economically viable (b) require conversion from mercury cell process to membrane or non-asbestos diaphragm processes, which are both economically and technically feasible
3. Reduce mercury use in products, including packaging	<ul style="list-style-type: none"> (a) ban or restrict mercury use in products for which affordable alternatives are available (b) restrict or ban mercury-containing pesticides; promote non-chemical alternatives such as integrated pest management (c) restrict use of mercury in pharmaceuticals (d) prohibit or limit continued trade in mercury-containing products for which affordable alternatives are available (e) require low mercury content in products for which mercury-free alternatives are not currently available (f) tax products that contain mercury to discourage their use (g) require special disposal and collection of mercury products to discourage their use (h) support research and development for mercury-free alternatives (i) promote educational campaigns, including registration and labeling requirements, to inform consumers about mercury-containing products and their health and environmental risks
4. Reduce mercury use in dental practice	<ul style="list-style-type: none"> (a) educate dental practitioners about health risks of mercury (b) restrict use of mercury amalgam on children and pregnant women (c) require dental practitioners to use alternatives to mercury amalgams (d) train dental practitioners to use alternative materials and provide easy access to them

4.4. REDUCE GLOBAL MERCURY SUPPLY

Strategic Objective	Available Response Measures
1. Reduce supply from mining and extraction of virgin mercury and other ores	<ul style="list-style-type: none"> (a) establish hierarchy of mercury sources, in which demand is met with existing mercury stocks instead of through primary mining (b) restrict and phase out mining of virgin mercury (c) restrict and phase out sale of mercury produced as bi-product from mining other ores; require mining companies to store mercury bi-product in environmentally sound storage facilities (d) allow mercury mining companies during operational phase-out to purchase and sell mercury from existing stocks (e.g. chlor-alkali facilities or strategic stockpiles) rather than mining virgin mercury
2. Reduce mercury supply from decommissioned chlor-alkali cells and other products and processes	<ul style="list-style-type: none"> (a) recycle mercury cells from decommissioned plants to meet present market demand, instead of meeting demand through primary mining (b) promote alternative materials and phase out mercury use in products and processes (c) restrict and phase out sale of recycled mercury (d) require environmentally sound terminal disposal and storage of recycled mercury to remove remaining mercury from global supply
3. Reduce mercury supply from stockpiles	<ul style="list-style-type: none"> (a) use national and strategic stockpiles to meet current market demand instead of meeting demand through virgin mercury mining (b) require registration of all existing mercury stockpiles to track and discourage sales of mercury (c) permanently retire stockpiles in environmentally sound terminal storage facilities
4. Reduce international trade of mercury	<ul style="list-style-type: none"> (a) phase out and ban international trade in elemental mercury (b) promote national and international restrictions and bans on trade in mercury-containing products, including prior informed consent procedures (c) ban import and export of mercury compounds, including cinnabar ore (d) ban import and export of wastes with high mercury content

4.5. FIND ENVIRONMENTALLY SOUND STORAGE SOLUTIONS FOR MERCURY

Strategic Objective	Available Response Measures
1. Reduce releases from stored mercury and mercury wastes	<ul style="list-style-type: none"> (a) develop BAT guidelines and regulations for terminal (long term) storage, including encapsulation within deep underground storage facilities impervious to seepage, earthquakes, and geological disturbances (b) require all wastes containing mercury or mercury compounds to be disposed in terminal storage facilities (c) stabilize mercury wastes and compounds to less reactive state prior to storage (d) establish post-closure monitoring, inspection, remediation, liability, and compensation requirements to encourage proper treatment of mercury and mercury-containing wastes in the event of contamination from storage facilities
2. Manage existing stockpiles of mercury and mercury-containing wastes to prevent environmental contamination	<ul style="list-style-type: none"> (a) ensure that all existing stockpiles of mercury are enclosed in leak proof, airtight containers (e.g. mercury containers or flasks), separated by cushioning/absorbent material, and stored atop collection plates to contain any possible leaks (b) over-pack smaller mercury flasks and containers in sealed, air tight drums for storage atop collection plates (c) clearly label all storage containers (d) restrict access to interim storage facilities and train employees on proper handling procedures (e) require frequent government inspection and oversight of storage facilities (f) require all obsolete products containing mercury (e.g. pesticides) to be stored under environmentally sound conditions or treated at recycling facilities that will ensure terminal storage of recycled mercury

4.6. ADDRESS THE REMEDIATION OF EXISTING CONTAMINATED SITES AFFECTING PUBLIC AND ENVIRONMENTAL HEALTH

Strategic Objective	Available Response Measures
1. Prevent mercury contamination from spreading	<ul style="list-style-type: none"> (a) survey, identify and test all sites possibly contaminated with mercury to determine contamination levels and critical areas requiring priority remediation (b) quarantine sources of contamination and contaminated areas to prevent further contamination (c) install barriers, covers, collection basins, or other technologies to minimize spread of mercury contamination in affected media (e.g., soil, sludge, water)
2. Control and remediate contaminated sites	<ul style="list-style-type: none"> (a) adopt and enforce legislation requiring environmental remediation after mercury contamination, emphasizing returning the medium to its pre-contaminated state (b) develop emergency response plans to minimize contamination from mercury spills and leaks (c) develop protocols for designating contaminated sites, and for selecting and testing sites to determine level of mercury contamination (d) establish standards for best environmental practices and minimum removal limits during remediation (e) develop guidelines for choosing BAT or BEP remediation technologies based on site-specific criteria (f) establish liability and compensation mechanisms that include ecological impact of contamination and future management costs (g) require listing of all mercury-containing hazardous waste sites (h) require responsible or remediating party to submit remedial plans for government approval prior to remediation (i) require early compliance benchmarks in remedial to ensure rapid quarantine and decontamination (j) encourage voluntary remediation, but frequently inspect voluntary and non-governmental remediation efforts (k) favor <i>in-situ</i> remediation plans over <i>ex-situ</i> when feasible to lessen chance of further contamination (l) remove contaminated medium from area and transport to a qualified treatment facility if <i>in-situ</i> treatment is not feasible (m) treat contaminated area using BAT (e.g., pump and treat technologies for groundwater treatment in waterways) (n) immobilize contaminated media; treat with bioremediation or phytoremediation (o) vaporize, wash, or flush contaminated soil or sludge to remove mercury content for treatment

4.7. INCREASE KNOWLEDGE ON AREAS SUCH AS INVENTORIES, HUMAN AND ENVIRONMENTAL EXPOSURE, ENVIRONMENTAL MONITORING AND SOCIO-ECONOMIC IMPACTS

Strategic Objective	Available Response Measures
1. Increase knowledge and capacity on mercury among States	<ul style="list-style-type: none"> (a) create a mercury register and conduct national inventories of all mercury stockpiles and production sources (b) improve global understanding of mercury emissions sources, fate, and transport (c) support research and development programs to improve emissions control devices, alternative products and processes, and understanding of biological and physical effects of mercury in humans and the environment (d) support pilot programs in developing countries to study and reduce mercury emissions, use, and contamination (e) support research on socio-economic costs of continued mercury use, including environmental impact analysis and remediation costs (f) develop model guidelines and legislation for addressing mercury remediation and pollution prevention and distribute to local, regional, and national governments (g) conduct regional workshops and presentations regarding threats of continued mercury use and environmental releases (h) provide States with reports on mercury and suggestions for mercury-free alternatives (i) promote information sharing on best available techniques and measures to reduce mercury emissions from point sources (j) develop strategies for enhanced outreach and risk communication activities to reach at-risk populations, including sensitive populations (k) facilitate international access to existing environmental data (e.g., distribution centers or internet databases) and improve ability of environmental data users to find data they need through comprehensive and accessible tools and training (l) support developing country capacity to access chemical and mercury information via the internet and to build national websites and foster networking
2. Increase knowledge and capacity among individual mercury users and consumers	<ul style="list-style-type: none"> (a) increase funding for organizations conducting outreach programs and research on environmentally sound alternatives to mercury-containing products and processes (b) support pilot programs in developing countries to study and reduce mercury emissions, use, and contamination (c) support development and distribution of technologies and strategies for monitoring mercury contamination (i.e., in fish) and informing affected populations (d) organize workshops, education programs, and distribution centers to inform public of mercury exposure and contamination pathways (e) conduct training workshops and educational programs to inform local communities about dangers of mercury use and availability of mercury-free alternatives for mercury-using processes such as artisanal and small-scale gold mining (f) increase public awareness and promotion of mercury-free products, technologies, and processes, using environmentally friendly alternatives (g) increase local and regional participation in informational workshops and training programs for persons handling mercury or mercury products and processes (h) initiate programs that promote local participation in environmental monitoring

REFERENCES

Basel Convention

BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTE AND THEIR DISPOSAL, 22 Mar. 1989, <http://www.basel.int/text/documents.html>.

Conference of the Parties, Eighth Meeting, *Mercury Waste and Basel Convention*, UNEP/CHW.8/INF/37 (2006), <http://www.basel.int/meetings/cop/cop8/docs/i37e.pdf>.

Conference of the Parties, Eighth Meeting, Decision VIII/33, *Programme and Budget for the Biennium 2007–2008*, UNEP/CHW.8/16 (2006), <http://www.basel.int/meetings/cop/cop8/docs/16eREISSUED.pdf>.

Conference of the Parties, Fifth Meeting, *Basel Declaration on Environmentally Sound Management, in Report of the Fifth Meeting of the Conference of the Parties to the Basel Convention*, <http://www.basel.int/meetings/cop/cop5/cop5reportfinal.pdf>.

Conference of the Parties, Seventh Meeting, Decision VII/41, *Financial matters, in Report of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal*, UNEP/CHW.7/33 (2004), <http://www.basel.int/meetings/cop/cop7/docs/33eRep.pdf>.

Conference of the Parties, Seventh Meeting, *Draft Technical Guidelines on the Environmentally Sound Recycling/reclamation of Metals and Metal Compounds (R4)*, UNEP/CHW.7/8/Add.3 (2004), <http://www.basel.int/meetings/cop/cop7/docs/08a3e.pdf>.

Conference of the Parties, Sixth Meeting, Decision VI/1, *Strategic Plan for the Implementation of the Basel Convention (to 2010)*, UNEP/CHW/.6/40 (2002), <http://www.basel.int/meetings/cop/cop6/StPlan.pdf>.

Expanded Bureau, Eighth COP Meeting, *Development of Guidelines on Environmentally Sound Management of Mercury Containing Wastes with Emphasis on the Development of Sound Disposal and Remediation Practices*, UNEP/SBC/BUREAU/8/1/4 (2007), <http://www.basel.int/meetings/bureau/bureau%201%20cop%208/docs/04e.pdf>.

Food and Agriculture Organization (FAO)

Food and Agriculture Organization Conference, Thirty-first Session, *Progress in the Revision of the International Code of Conduct on the Distribution and Use of Pesticides*, C 2001/7 (2001), http://www.fao.org/docrep/meeting/003/Y1616e/Y1616e00.htm#P39_992.

Food and Agriculture Organization, *FAO Guidelines on Pesticide Management in Support of the Code of Conduct: Framework* (undated), <http://www.fao.org/ag/AGP/AGPP/Pesticid/Code/Guidelines/Framework.htm>.

Food and Agriculture Organization, *International Code of Conduct on the Distribution and Use of Pesticides* (2002), <http://www.fao.org/docrep/005/y4544e/y4544e00.htm#Contents>.

Food and Agriculture Organization, *Strategic Programme 2006-2011 for the Implementation by FAO of the Revised Version of the International Code of Conduct on the Distribution and Use of Pesticides* (2006), <http://www.fao.org/ag/agp/agpp/pesticid/Code/Download/Strategyguideline06.pdf>.

Global Environment Facility (GEF)

GEF Council, *Focal Area Strategies and Strategic Programming for GEF-4*, GEF/C.31/10 (2007), [http://www.thegef.org/uploadedFiles/Documents/Council_Documents__\(PDF_DOC\)/GEF_31/C.31.10_Focal_Area_Strategies.pdf](http://www.thegef.org/uploadedFiles/Documents/Council_Documents__(PDF_DOC)/GEF_31/C.31.10_Focal_Area_Strategies.pdf).

GEF Council, Joint Summary of the Chairs, *Decision on Agenda Item 16: Focal area strategies and Strategic Programming for GEF-4* (2007), [http://www.thegef.org/uploadedFiles/Documents/Council_Documents__\(PDF_DOC\)/GEF_31/Joint%20Summary%20of%20the%20Chairs\(1\).pdf](http://www.thegef.org/uploadedFiles/Documents/Council_Documents__(PDF_DOC)/GEF_31/Joint%20Summary%20of%20the%20Chairs(1).pdf).

GEF Council, *Joint Summary of the Chairs, GEF Council Meeting, May 14-16, 2003* (2003), http://www.gefweb.org/Summary_of_the_Chairs.pdf.

International Maritime Organization (IMO)

1996 PROTOCOL TO THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER (London Protocol), as amended, http://www.imo.org/home.asp?topic_id=1488.

CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER (London Convention), 1972, http://www.imo.org/includes/blastDataOnly.asp/data_id%3D16925/LC1972.pdf.

PROTOCOL OF 1978 RELATING TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS OF 2 NOVEMBER 1973 (MARPOL 73/78), 17 February 1978, 1340 U.N.T.S. Reg. No. 22484.

Rotterdam Convention

ROTTERDAM CONVENTION ON THE PRIOR INFORMED CONSENT PROCEDURE FOR CERTAIN HAZARDOUS CHEMICALS AND PESTICIDES IN INTERNATIONAL TRADE, 10 Sept. 1998, <http://www.pic.int/en/ViewPage.asp?id=104>.

Conference of the Parties, Second Meeting, Decision RC-2/7, *Amendment of the financing and budget arrangements for the biennium 2005–2006, in Report of the Conference of the Parties to the Rotterdam Convention on the Prior Informed Consent Procedure in International Trade on the Work of its Second Meeting*, UNEP/FAO/RC/COP.2/19 (2005), <http://www.pic.int/cops/reports/z34/English/K0582936%20PICCOP2%20report.pdf>.

Conference of the Parties, Third Meeting, Decision RC-3/5, *Financial Mechanism, in Report of the Conference of the Parties to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade on the Work of its Third Meeting*, annex I, UNEP/FAO/RC/COP.3/26 (2006), <http://www.pic.int/cops/reports/z35/English/K0653538%20COP-3-26%20Final%20PIC%20Report.pdf>.

Intergovernmental Negotiating Committee for an International Legally Binding Instrument for the Application of the Prior Informed Consent Procedure, Sixth Session, *Activities of the Secretariat in the Interim Period and Review of the Situation as Regards the Trust Fund*, UNEP/FAO/PIC/INC.6/3 (1999), <http://www.pic.int/incs/INC6/3/English/INC6-3E.PDF>.

Rotterdam Convention Secretariat, *PIC Circular XXIII – June 2006* (2006), <http://www.pic.int/en/Circular/CIRC-23-EN.pdf>.

Rotterdam Convention, *PIC Regions* (undated), <http://www.pic.int/home.php?type=t&id=7>.

Stockholm Convention

STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS (POPs), 23 May 2001, http://www.pops.int/documents/convtext/convtext_en.pdf

Conference of Plenipotentiaries on the Stockholm Convention on Persistent Organic Pollutants Stockholm, *Final Act*, UNEP/POPS/CONF/4 (2001), http://www.pops.int/documents/meetings/dipcon/25june2001/conf4_finalact/en/FINALACT-English.PDF.

Conference of the Parties, First Meeting, Decision SC-1/1, *Rules of Procedure, in Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the Work of its First Meeting*, annex I, UNEP/POPS/COP.1/31 (2005), http://www.pops.int/documents/meetings/cop_1/meetingdocs/en/cop1_31/COP1_REPORT.pdf.

Conference of the Parties, First Meeting, Decision SC-1/4, *Financing and Budget for the Biennium 2006–2007, in Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the Work of its First Meeting*, UNEP/POPS/COP.1/31 (2005), http://www.pops.int/documents/meetings/cop_1/meetingdocs/en/cop1_31/COP1_REPORT.pdf.

Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants, First Session, “Rules of Procedure for the Meetings of the Intergovernmental Negotiating Committee” (1998), in *Report of the Intergovernmental Negotiating Committee on the Work of Its First Session*, UNEP/POPS/INC.1/7, <http://www.pops.int/documents/meetings/inc1/inc1finalreport-e.htm>.

Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants, Sixth Session, *Activities of the Secretariat and Review of the Situation as Regards Extrabudgetary Funds*, UNEP/POPS/INC.6/3 (2002), <http://www.pops.int/documents/meetings/inc6/en/inc6-3e.pdf>.

Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants, Third Session, *Report of the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants on the Work of its Third Session*, UNEP/POPS/INC.3/4 (1999), http://www.chem.unep.ch/pops/POPs_Inc/INC_3/inc-english/inc3-4.pdf.

Persistent Organic Pollutants Review Committee, Ad Hoc Working Group on Perfluorooctane Sulfonate, *Draft Risk Management Evaluation for Perfluorooctane Sulfonate* (2007), http://www.pops.int/documents/meetings/poprc/drprofile/drme/DraftRME_PFOS.pdf.

Strategic Approach to International Chemicals Management (SAICM)

International Conference on Chemicals Management, DUBAI DECLARATION ON INTERNATIONAL CHEMICALS MANAGEMENT, 6 June 2006, http://www.chem.unep.ch/saicm/SAICM%20texts/standalone_txt.pdf.

International Conference on Chemicals Management, Resolution I/1, *Implementation Arrangements* (2006), http://www.chem.unep.ch/SAICM/fundraising/ICCM_resolution_II.pdf.

International Conference on Chemicals Management, Resolution I/4, *Quick Start Programme*, appendix II, “Terms of Reference” (2006), <http://www.chem.unep.ch/saicm/ICCM%20decision%20I.4%20QSP%20Eng.pdf>.

United Nations Economic Commission for Europe (UNECE)

1979 CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION, 13 Nov. 1979, <http://www.unece.org/env/lrtap/full%20text/1979.CLRTAP.e.pdf>.

Aarhus Convention, Kiev Protocol on Pollutant Release and Transfer Registers, *Objective of the Protocol* (last updated 30 Jul. 2007), <http://www.unece.org/env/pp/prtr.htm>.

CONVENTION ON ENVIRONMENTAL IMPACT ASSESSMENT IN A TRANSBOUNDARY CONTEXT (Espoo Convention), 25 Feb. 1991, <http://www.unece.org/env/eia/eia.htm>.

CONVENTION ON THE PROTECTION AND USE OF TRANSBOUNDARY WATERCOURSES AND INTERNATIONAL LAKES, 17 Mar. 1992, <http://www.unece.org/env/water/text/text.htm>.

Executive Body for the Convention on Long-Range Transboundary Air Pollution, *Possibilities for Opening the Convention*, ECE/EB.AIR/2006/8 (2006), <http://www.unece.org/env/documents/2006/eb/EB/ece.eb.air.2006.8.e.pdf>.

KIEV PROTOCOL ON POLLUTANT RELEASE AND TRANSFER REGISTERS TO THE AARHUS CONVENTION ON ACCESS TO INFORMATION, PUBLIC PARTICIPATION IN DECISION-MAKING AND ACCESS TO JUSTICE IN ENVIRONMENTAL MATTERS, 21 May 2003 (not yet entered into force), <http://www.unece.org/env/pp/prtr/docs/PRTR%20Protocol%20English.pdf>.

PROTOCOL ON HEAVY METALS (1998 Aarhus Protocol), 24 June 1998, <http://www.unece.org/env/lrtap/full%20text/1998.Heavy.Metals.e.pdf>.

UNECE Secretariat, Convention on Long-range Transboundary Air Pollution, *The 1979 Geneva Convention on Long-range Transboundary Air Pollution* (last updated 5 July 2007), http://www.unece.org/env/lrtap/lrtap_h1.htm.

United Nations Environment Programme (UNEP)

UNEP Chemicals, "Toolkit for Identification and Quantification of Mercury Releases" (Pilot Draft, 2005), <http://www.chem.unep.ch/mercury/Toolkit/UNEP-final-pilot-draft-toolkit-Dec05.pdf>.

UNEP Chemicals, GLOBAL MERCURY ASSESSMENT (2002), <http://www.chem.unep.ch/mercury/default.htm>.

UNEP Chemicals, GUIDE FOR REDUCING MAJOR USES AND RELEASES OF MERCURY (2006), <http://www.chem.unep.ch/mercury/Sector%20Guide%202006.pdf>.

UNEP Chemicals, SUMMARY OF SUPPLY, TRADE AND DEMAND INFORMATION ON MERCURY (2006), <http://www.chem.unep.ch/mercury/HgSupplyTradeDemandJM.pdf>.

UNEP Global Mercury Assessment Working Group, First Meeting, *Stockholm Convention on Persistent Organic Pollutants and its Possible Relevance to Mercury and Mercury Compounds*, UNEP(DTIE)/GMA/WG.1/INF/3 (2002) <http://www.chem.unep.ch/mercury/WGmeeting/K0261931-WG1-inf3.pdf>.

UNEP Governing Council, *Bali Strategic Plan for Technology Support and Capacity-building*, UNEP/GC.23/6/Add.1, annex (2004), <http://www.unep.org/GC/GC23/documents/GC23-6-add-1.pdf>.

UNEP Governing Council, Decision 15/30, *London Guidelines for the Exchange of Information on Chemicals in International Trade* (1989), <http://www.chem.unep.ch/ethics/english/longuien.htm>.

UNEP Governing Council, Decision 19/13C, *International Action to Protect Human Health and the Environment Through Measures Which Will Reduce and/or Eliminate Emissions and Discharges of Persistent Organic Pollutants, Including the Development of an International Legally Binding Instrument* (1999), http://www.chem.unep.ch/pops/gcpops_e.html.

UNEP Governing Council, Decision 22/4, *Chemicals, in Report of the Twenty-second Session of the Governing Council/Global Ministerial Environment Forum 3-7 February 2003* (2003), <http://www.unep.org/gc/gc22/REPORTS.asp>.

UNEP Governing Council, Decision 23/9 IV, *Chemicals Management: Mercury Programme* (2005), <http://www.chem.unep.ch/Mercury/mandate-2005.htm>.

UNEP Governing Council, Decision 24/3 IV, *Chemicals Management: Mercury* (2007), http://www.unep.org/gc/gc24/docs/GC24_decisions.pdf.

UNEP Governing Council, Decision SS.VII/3, *Strategic Approach to International Chemicals Management, in Report of the Governing Council on the Work of its Seventh Special Session/Global Ministerial Environment Forum 13-15 February 2002*, UNEP/GCSS.VII/6 (2002), <http://www.nyo.unep.org/pdfs/gcigm.pdf>.

UNEP Governing Council, *International Environmental Governance: Report of the Executive Director, Addendum, Implementation of the Bali Strategic Plan for Technology Support and Capacity-building*, UNEP/GC.24/3/Add.1 (2006), http://www.unep.org/gc/gc24/working_documents.asp.

United Nations Framework Convention on Climate Change (UNFCCC)

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, 9 May 1992, <http://unfccc.int/resource/docs/convkp/conveng.pdf>.

THE KYOTO PROTOCOL TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, 16 Mar. 1998, <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

U.N. Framework Convention on Climate Change, Conference of the Parties, Decision 5/CP.11, *Additional Guidance to an Operating Entity of the Financial Mechanism, in Report of the Conference of the Parties on its Eleventh Session, held at Montreal from 28 November to 10 December 2005: Addendum*, FCCC/CP/2005/5/Add.1 (2006), <http://unfccc.int/resource/docs/2005/cop11/eng/05a01.pdf>.

U.N. Framework Convention on Climate Change, Conference of the Parties, Decision 12/CP.11, *Programme Budget for the Biennium 2006-2007, in Report of the Conference of the Parties on its Eleventh Session, held at Montreal from 28 November to 10 December 2005: Addendum*, FCCC/CP/2005/Add.1 (2006), <http://unfccc.int/resource/docs/2005/cop11/eng/05a01.pdf>.

Other Multilateral Treaties, Instruments, and Processes

AGENDA 21: EARTH'S ACTION PLAN (14 June 1992),
<http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm>.

AGREEMENT RELATING TO THE IMPLEMENTATION OF PART XI OF THE UNITED NATIONS CONVENTION ON THE LAW OF THE SEA OF 10 DECEMBER 1982,
http://www.un.org/Depts/los/convention_agreements/convention_overview_part_xi.htm

CARTAGENA PROTOCOL ON BIOSAFETY TO THE CONVENTION ON BIOLOGICAL DIVERSITY, 29 Jan. 2000,
<http://www.cbd.int/doc/legal/cartagena-protocol-en.pdf>.

European Commission, Regulation (EC) No. 1980/2000 of the European Parliament and of the Council of 17 July 2000 on a Revised Community Eco-label Award Scheme, 2000 O.J. (L 237) (2000),
http://ec.europa.eu/environment/ecolabel/whats_eco/ov_concept_en.htm.

Kimberley Process Certification Scheme (2002),
http://www.kimberleyprocess.com/index.php?option=com_content&task=blogcategory&id=18&Itemid=35.

MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER, 16 Sept. 1987, as amended,
<http://www.unep.org/ozone/pdfs/Montreal-Protocol2000.pdf>.

Montreal Protocol, Meeting of the Parties, Decision XVII/42, *Financial matters: Financial reports and budgets, in Report of the Seventh Meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the Seventh Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer*, UNEP/OzL.Conv.7/7-UNEP/OzL.Pro./17/11 (2005),
http://unep.org/ozone/Meeting_Documents/mop/17mop/17mop-11.e.pdf.

Organisation for Economic Co-Operation and Development (OECD), INSTRUMENT MIXES FOR ENVIRONMENTAL POLICY (2007) (Executive Summary available at
<http://www.oecd.org/dataoecd/27/62/38701119.pdf>).

PROTOCOL RELATING TO THE STATUS OF REFUGEES, 16 Dec. 1966,
<http://www.ohchr.org/english/law/protocolrefugees.htm>.

Secretariats of the Basel, Rotterdam and Stockholm Conventions, Ad Hoc Joint Working Group on Enhanced Cooperation and Coordination Between the Basel, Stockholm, and Rotterdam Conventions (2007), <http://ahjwg.chem.unep.ch/>.

U.N. Forum on Forests, *Non-legally Binding Instrument on All Types of Forests*, in U.N. Econ. & Soc. Council, U.N. Forum on Forests, *Report of the Seventh Session*, E/CN.18/2007/8, E/2007/42 (SUPP) (2007), <http://www.un.org/esa/forests/documents-unff.html#7>.

U.N. Human Settlements Program, *The Habitat Agenda Goals and Principles, Commitments and the Global Plan of Action* (1996), http://www.unhabitat.org/downloads/docs/1176_6455_The_Habitat_Agenda.pdf.

United Nations General Assembly, *Conventions and Protocols in the Field of the Environment*, G.A. Res. 3436, 30th sess. (9 Dec. 1975), [http://daccess-ods.un.org/access.nsf/Get?Open&DS=A/RES/3436\(XXX\)&Lang=E&Area=RESOLUTION](http://daccess-ods.un.org/access.nsf/Get?Open&DS=A/RES/3436(XXX)&Lang=E&Area=RESOLUTION).

United Nations General Assembly, *Institutional and Financial Arrangements for International Environmental Cooperation*, G.A. Res. 2997, 27th sess., U.N. Doc. A/RES/3004 (15 Dec. 1972), <http://daccessdds.un.org/doc/RESOLUTION/GEN/NR0/270/27/IMG/NR027027.pdf?OpenElement>.

United Nations General Assembly, VIENNA CONVENTION ON THE LAW OF TREATIES, May 22, 1969, 1155 United Nations Treaty Series 331,
http://untreaty.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf.

United Nations Treaty Collection, "Protocols," *Treaty Reference Guide* (1999), <http://untreaty.un.org/English/guide.asp>.

United Nations, Treaty Section of the Office of Legal Affairs, *Treaty Handbook* (2002), <http://untreaty.un.org/English/TreatyHandbookEng.pdf>.

VIENNA CONVENTION FOR THE PROTECTION OF THE OZONE LAYER, Mar. 22, 1985, <http://www.unep.org/Ozone/pdfs/viennaconvention2002.pdf>.

World Summit on Sustainable Development (WSSD), *Johannesburg Plan of Implementation* (2002), http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm.

Miscellaneous

Abbott, Kenneth W. & Duncan Snidal, *Hard and Soft Law in International Governance*, 54 INTERNATIONAL ORGANIZATION 421 (2000).

Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services, TOXICOLOGICAL PROFILE FOR MERCURY (1999), <http://www.atsdr.cdc.gov/toxprofiles/tp46.pdf>.

Association for Responsible Mining (undated), <http://www.communitymining.org>.

Bodansky, Daniel, *The Framework Convention/Protocol Approach*, WHO FCTC Technical Briefing Series, WHO/NCD/TFI/99.1 (1999), available at <http://tobaccofreekids.org/campaign/global/pdf/fctc1.pdf>

Brack, Duncan, *Monitoring the Montreal Protocol*, in VERIFICATION YEARBOOK (2003), <http://www.isn.ethz.ch/pubs/ph/details.cfm?lng=en&id=13453>.

Buccini, John, *The Global Pursuit of the Sound Management of Chemicals* (World Bank 2004), <http://siteresources.worldbank.org/INTPOPS/Publications/20486416/GlobalPursuitOfSoundManagementOfChemicals2004Pages1To67.pdf>.

Clean Air Task Force, *Fact Sheet: The Edwardsport IGCC Proposal: A Key Step Forward to Reducing Global Coal Impacts* (2007), http://www.catf.us/press_room/20070409-Edwardsport_IGCC_Proposal_Fact_Sheet.pdf.

Dinham, Barbara, *The Success of a Voluntary Code in Reducing Pesticide Hazards in Developing Countries*, in GREEN GLOBE YEARBOOK 1996 (1996), http://www.fni.no/YBICED/96_02_dinham.pdf.

Downs, George W. et al., *Is the Good News About Compliance Good News About Cooperation?*, 50 INTERNATIONAL ORGANIZATION 379 (1996).

Foote, Greg, *Considering Alternatives: The Case for Limiting CO₂ Emissions From New Power Plants Through New Source Review*, 34 ENVIRONMENTAL LAW REPORTER 10642 (2004), http://www.ciel.org/Publications/CO2_Foote_11May04.pdf.

Global Ecolabelling Network (GEN), *What is Ecolabelling?* (undated), <http://www.gen.gr.jp/eco.html>.

Global Reporting Initiative (undated), <http://www.globalreporting.org/Home>.

Green Gold Corporation (Corporación Oro Verde), *Certified Miners Receive Higher Incomes* (undated), http://www.greengold-oroverde.org/ingles/ov_impacto_ing.html.

HP (formerly Hewlett-Packard), *HP Standard 007-2 Vendor Requirements for Hardware Recycling* (13 Apr. 2007), <http://www.hp.com/hpinfo/globalcitizenship/environment/recycle/finalrecstds.pdf>.

International Council on Metals and Mining, *ICMM Statement on Mercury* (8 Feb. 2007), <http://www.icmm.com/publications/1591ICMMStatementonMercury.pdf>.

International Council on Metals and Mining, Sustainable Development Framework, *ICMM Principles* (2003), http://www.icmm.com/publications/ICMM_Principles_en.pdf.

International Union of Air Pollution Prevention Associations, *Strengthening International Co-Operation in the Abatement of Air Pollution at Regional, Hemispheric and Global Scales*, LRTAP Executive Body Informal Doc. 6 (2005), http://www.unece.org/env/documents/2005/eb/EB/InfDoc6.IUAPPA.Memorandum_to_LRTAP.pdf.

Michael Eddleston et al, *Pesticide Poisoning in the Developing World – A Minimum Pesticides List*, 360 THE LANCET 1163 (2002), <http://www.iwmi.cgiar.org/health/pesticide/minimum%20pesticide%20list.pdf>.

Moomaw, William R., *The Environmental Era - From Two Sides of the Atlantic*, Newsletter of the International Human Dimensions Programme on Global Environmental Change, No. 3/01 (Bonn, F.R.G.) (2001), http://www.ihdp.uni-bonn.de/html/publications/update/update01_03/IHDPUpdate01_03_moomaw.html.

Raustiala, Kal, *Form and Substance in International Agreements*, 99 AMERICAN JOURNAL OF INTERNATIONAL LAW 581 (2005).

Sohn, Louis B., *International Law Implications of the 1994 Agreement*, 88 THE AMERICAN JOURNAL OF INTERNATIONAL LAW 696 (Oct. 1994).

U.S. Environmental Protection Agency, *Final Guidance on Environmentally Preferable Purchasing for Executive Agencies*, 64 Fed. Reg. 45,810 (1999), <http://www.epa.gov/epp/pubs/guidance/finalep guidance.pdf>.

Victor, David G. et al., *Introduction and Overview*, in THE IMPLEMENTATION AND EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL COMMITMENTS: THEORY AND PRACTICE 1, 20 (David G. Victor et al. eds., 1998).

Yang, Tseming, *International Treaty Enforcement as a Public Good: The Role of Institutional Deterrent Sanctions in International Environmental Agreements*, 27 MICH. J. INT'L L. 1131, 1145 (2006), available at <http://students.law.umich.edu/mjil/27.4/Yang.pdf>.

Zhao, Jimin, *The Multilateral Fund and China's Compliance with the Montreal Protocol*, 11 JOURNAL OF ENVIRONMENT & DEVELOPMENT 331 (2002).