

Principles and Approaches of Sustainable Development and Chemicals Management for a Strategic Approach to International Chemicals Management (SAICM)

Prepared by
Glenn M. Wiser and Daniel B. Magraw, Jr.
Center for International Environmental Law (CIEL)

July 2005

Table of Contents

Executive Summary	iii
List of Acronyms and Abbreviations	vii
I. Introduction	1
A. Background and Purpose of Study	1
B. Scope of Study	1
C. Structure of Study	2
II. Analysis of Principles and Approaches	3
A. Foundational Concepts: Sustainability	3
1. Integrated Chemicals Management	3
2. Inter-Generational Equity	6
B. Avoiding Harm and Managing Risk	8
1. Precaution	8
2. Proportionality	12
3. Life Cycle Approach	14
4. Prevention	17
5. Substitution (Alternatives)	19
6. Internalization of Costs (Polluter Pays)	21
C. Transparency, Participation, and Governance	24
1. Public Participation	24
2. Right to Know	26
3. Confidential Business Information	29
4. Good Governance	31
D. Cooperation and Accountability	33
1. Cooperation among States, Including Common but Differentiated Responsibilities ...	33
2. Partnerships	36
3. Liability	38
III. Conclusions and Recommendations	41
Annex 1: Proposed Text for the SAICM Overarching Policy Strategy, Part V	43
Annex 2: Proposed Text for Additional Concrete Measures	47
References	51

Executive Summary

During the Second Preparatory Committee (PrepCom2) to develop a Strategic Approach to International Chemicals Management (SAICM), Switzerland agreed to undertake intersessional work in identifying principles and approaches of sustainable development and chemicals management that might be incorporated into the SAICM. It was hoped that a limited study would elucidate existing relevant principles and approaches, enhance understanding of them, and clarify how they might be addressed by the SAICM.

This study is presented with a view toward furthering understanding and agreement among SAICM participants on this important issue. Agreement among SAICM participants on principles and approaches can establish common ground for development and implementation of the SAICM by indicating its essential characteristics; providing guidance in interpreting the meaning of its constituent parts; and helping governments, IGOs, NGOs, commercial enterprises, and other stakeholders to fill in gaps as they attempt to realize SAICM objectives.

To that end, the study identifies 15 principles and approaches that the authors believe have the most direct relevance to the SAICM. Most of these principles and approaches were also suggested by SAICM participants at the first and second PrepComs. For each principle and approach, the study provides its description and main elements, its origin and application in selected chemicals and wastes instruments and policies, and its possible relevance to the SAICM. The study also suggests how each principle or approach might be addressed under the SAICM Overarching Policy Strategy (OPS), and it identifies concrete measures to which the principle or approach may be relevant.

The study includes the following principles and approaches:

1. *Integrated chemicals management (ICM)*: An overarching concept that considers the production, formulation and processing, transport, distribution, use, and disposal of chemicals in an integrated and holistic manner and is characterized by several major components, including (a) the life cycle approach, (b) stakeholder involvement, (c) coordination across and between governments, and (d) synergies to make the best use of available resources and avoid unnecessary duplication.
2. *Inter-generational equity*: The concept that the present generation has a right to use and enjoy the resources of the Earth, but is under an obligation to take into account the long-term impacts of its activities and to sustain the resource base and the global environment for the benefit of future generations of humankind.
3. *Precaution*: A decision-making tool for taking action in response to threats of serious or irreversible damage to human health and/or the environment when full scientific information is not available.
4. *Proportionality*: The concept that measures taken to protect human health and the environment should be proportional to the chosen level of protection, taking into account technical and economic feasibility and other relevant factors, as well as a country's chosen level of protection.

5. *Life cycle approach*: A tool for conducting a systematic, cradle-to-grave (or cradle-to-cradle) analysis to estimate the environmental consequences of alternative materials, designs, manufacturing processes, product use patterns, and end of life alternatives.
6. *Prevention*: A concept dealing with how harm to human health and the environment can be averted, recognizing that the economic and social costs of avoiding damage and injury are nearly always less than the costs of repair, treatment, or compensation after they happen.
7. *Substitution*: The concept that, when a chemical product may cause risks to human health or the environment, it should be avoided if products or processes that are less dangerous can reasonably be used instead.
8. *Internalization of costs (polluter pays principle)*: The use of market and/or regulatory instruments to ensure that persons who are responsible for pollution, or for production or processes that may ultimately lead to pollution, bear the full environmental and social costs of their activities, and that those costs are reflected in the market price for goods and services.
9. *Public participation*: Unrestricted public access to environmental information with only limited, explicitly defined exceptions; the right of the public to participate in environmental decision-making processes and have its input taken into account; and opportunities for redress when authorities fail to comply with their duties to provide access to information or decision-making.
10. *Right to know*: A specific aspect of the public's access to environmental information: the concept that the public has the right to know information regarding the risks to human and environmental health from chemicals, including chemical accidents, manufacturing, use, and disposal.
11. *Confidential business information (CBI)*: Information provided by a business entity that cannot normally be disclosed by government to a third party (including, sometimes, other governments or governmental departments).
12. *Good governance*: The concept that transparent, accountable, and honest government is an important component of sustainable development and, more particularly, an essential element for the prevention and punishment of illegal traffic in hazardous wastes and restricted and banned chemicals.
13. *Cooperation among States, including common but differentiated responsibilities*: The concept that, in order to effect collective, global action to achieve sustainable development, different standards, delayed compliance timetables, or less stringent treaty commitments may be appropriate for different countries at different stages of development, and that developed countries have a special obligation with respect to providing technical and financial assistance to developing countries and countries with economies in transition.
14. *Partnerships*: Collaborations among stakeholders such as governments, IGOs, industry groups, business, and NGOs that allow each partner to leverage its unique set of expertise, efficiencies, and networks to achieve a more productive and sustainable outcome than if pursued alone.
15. *Liability*: The concept of holding a public or private entity responsible for providing compensation for an injury after it has occurred.

Due in part to the interrelated nature of these principles and approaches and their broad applicability to chemicals management and sustainable development, the study suggests that most of the principles and approaches are relevant to most of the concrete measures that have so far been identified. However, in some cases, the study proposes that the concrete measures should contain additional, specific references to certain principles and approaches. In addition to being included in the body of the study, these proposed additional concrete measures are summarized in Annex 2, which presents them in the tabular format of the SAICM concrete measures document (Annex V of the PrepCom2 meeting report).

Regarding the OPS, the study concludes that two of the concepts identified above (life cycle approach and confidential business information) do not need to be listed separately in the OPS Principles and Approaches section (Part V), because they are components of other principles or approaches that should be separately listed. Thus, the study proposes that SAICM participants may wish to consider listing 13 principles and approaches in the OPS. In conformity to requests by participants at PreCom2, the study proposes specific textual language for each of these principles and approaches. Each of these principles and approaches has been previously included and endorsed in the Rio Declaration, Agenda 21, the United Nations Millennium Declaration, and/or the WSSD Plan of Implementation. Accordingly, the proposed text for each principle or approach generally references one or more of these foundational instruments and uses language that is either based on, or comes directly from, those instruments. A composite document of all 13 of the principals and approaches proposed for Part V of the OPS may be found in Annex 1 to the study.

An earlier draft of the study was posted on the SAICM website with an invitation for interested parties to review the draft and submit any comments they might have directly to the authors. Comments were received from several governments in time to be considered in this final draft, including from Japan, Switzerland, the European Union (with additional, individual comments from Denmark, Sweden, the Netherlands, and the United Kingdom), and joint comments from Croatia and Slovenia. One parastatal entity, Consejo Estatal de Protección al Ambiente (COEPA) of Veracruz, Mexico, also submitted informal comments. It is the understanding of the authors that these comments will be posted on the SAICM website, along with this final draft. To the extent that time permitted, the authors attempted to deal with these comments appropriately.

List of Acronyms and Abbreviations

CBDR	common but differentiated responsibilities
CBI	confidential business information
CEFIC	Conseil européen de l'industrie chimique (European Chemical Industry Council)
CFCs	chlorofluorocarbons
CIEL	Center for International Environmental Law
CITES	Convention on International Trade in Endangered Species
CoE	Council of Europe
DDT	1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
ICM	integrated chemicals management
IFCS	Intergovernmental Forum on Chemical Safety
IGO	intergovernmental organization
ILO	International Labour Organization
IMO	International Maritime Organization
IPM	integrated pest management
IOMC	Inter-Organization Programme for the Sound Management of Chemicals
ISO	International Organization for Standardization
MDGs	Millennium Development Goals
MEA	multilateral environmental agreement
NGO	non-governmental organization
OAS	Organization of American States
OECD	Organisation for Economic Co-operation and Development
OPS	Overarching Policy Strategy
PBTs	persistent, bioaccumulative, toxic substances
PIC	prior informed consent
POPs	persistent organic pollutants
PrepCom2	Second Preparatory Committee
PRTR	Pollutant Release and Transfer Register
SAICM	Strategic Approach to International Chemicals Management
TSCA	Toxic Substances Control Act
UNCED	United Nations Conference on Environment and Development
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
USEPA	U.S. Environmental Protection Agency
WSSD	World Summit on Sustainable Development

Principles and Approaches of Sustainable Development and Chemicals Management for a Strategic Approach to International Chemicals Management (SAICM)

**Prepared by
Glenn M. Wiser and Daniel B. Magraw, Jr.
Center for International Environmental Law (CIEL)**

July 2005

I. Introduction

A. Background and Purpose of Study

1. During the Second Preparatory Committee (PrepCom2) to develop a Strategic Approach to International Chemicals Management (SAICM), Switzerland agreed to undertake intersessional work in identifying principles and approaches of sustainable development and chemicals management that might be incorporated into the SAICM. It was hoped that a limited study would elucidate existing relevant principles and approaches, enhance understanding of them, and clarify how they might be addressed by the SAICM.

2. This study was prepared by the Center for International Environmental Law (CIEL), an independent non-governmental organization (NGO) with offices in the United States and Switzerland, in consultation with Switzerland, for presentation by Switzerland at PrepCom3. The terms of reference of the study may be viewed on the SAICM website at <http://www.chem.unep.ch/saicm/meeting/intsession/PrinciplesStudy.pdf>.

B. Scope of Study

3. This study identifies and evaluates principles and approaches of sustainable development and chemicals management that might be incorporated into the SAICM. After considering a wide range of principles and approaches, the authors of the study focused on those 15 that appear to have the most direct relevance to the SAICM.

4. These 15 principles and approaches appear in many sources and contexts, both international and domestic. Of particular importance are the principles established at two United Nations conferences, the 1972 Conference on the Human Environment (Stockholm Conference) and the 1992 United Nations Conference on Environment and Development in Rio de Janeiro (UNCED, or Rio Conference). Both of these conferences produced declarations of principles (the 1972 Stockholm Declaration and the 1992 Rio Declaration, respectively) that were adopted by the United Nations General Assembly. These have been elaborated and supplemented by numerous international instruments, including Agenda 21, the United Nations Millennium Declaration, the 2002 World Summit on Sustainable Development (WSSD) Plan of Implementation, multilateral agreements relating to chemicals and other topics, judicial

decisions, reports of intergovernmental organizations (IGOs) and governments, and scholarly analyses, as well as by on-the-ground experience in managing chemicals.

5. In considering principles and approaches, this study focuses on their functional relevance to the SAICM, not on the question of whether a particular concept is a “principle” or an “approach.” Similarly, the study does not address the question of whether particular principles (or approaches) are, or are not, binding international law. Opinions vary among governments with respect to that question as it applies to some principles, and addressing the question here would distract from the purpose of the study. In order to avoid confusion in this respect, the text sometimes refers to principles and approaches jointly as “concepts” unless referring to a particular text (e.g., one of the Rio “Principles”) or a commonly used name (e.g., the “polluter pays principle”). Finally, the study provides a representative selection of sources and contexts in which a principle or approach appears; it does not attempt to identify every source, due to space constraints.

C. Structure of Study

6. The study is organized in three parts. Part I (the present part) is the Introduction, which includes the purpose, scope, and structure of the study. Part II describes and analyzes 15 principles and approaches with respect to their possible relevance to the SAICM. Part III contains conclusions and recommendations. Following that are two Annexes. The first contains possible text for the principles and approaches section (Part V) of the SAICM Overarching Policy Statement. The second Annex contains proposed text for concrete measures and activities that could help implement some of the principles and approaches. These proposals are provided in the tabular format of the concrete measures document contained in Annex V of the PrepCom2 meeting report. Finally, the study contains a List of References.

7. For organizational purposes only, Part II groups the principles and approaches under four headings: (1) Foundational Concepts: Sustainability; (2) Avoiding Harm and Managing Risk; (3) Transparency, Participation, and Governance; and (4) Cooperation and Accountability. Part II then describes and analyzes each principle and approach by using the following template:

- description and main elements;
- origin and application in selected chemicals and wastes instruments and policies, and other instruments if relevant;
- relevance to the SAICM;
- how the principle/approach might be addressed under the SAICM Overarching Policy Strategy (OPS); and
- identification of concrete measures relevant to the principle/approach options that could be included in the concrete measures section of the final SAICM document.

II. Analysis of Principles and Approaches

A. Foundational Concepts: Sustainability

8. The concept of sustainability means that development efforts, including those aimed at protecting health and the environment, should be undertaken in a manner that “meets the needs of the present without compromising the ability of future generations to meet their own needs.”¹ Principles 4 and 25 of the 1992 Rio Declaration make clear that policies and activities in various spheres, including environmental protection, must be integrated in order to achieve sustainable development. They also make clear that the efforts to improve society, including those to protect the environment, achieve peace, and accomplish economic development, are interdependent. These themes of integration and interdependence were reiterated and further elaborated in the 1995 Copenhagen Declaration on Social Development (integration of economic development, social development, and environmental development)² and in Millennium Development Goal number 7 (“Ensuring environmental sustainability”).³ Paragraph 31 of the Millennium Declaration speaks of the need for greater policy coherence and increased cooperation among multilateral institutions.⁴ Integration and interdependence were also among the main themes discussed at the 2002 Johannesburg World Summit on Sustainable Development (WSSD).

9. This section of the study concentrates on two primary elements of sustainability: integration and inter-generational equity. For the SAICM, integration may be most appropriately viewed through the concept of integrated chemicals management.

1. Integrated Chemicals Management

1.1 Description and Main Elements

10. Integrated chemicals management (ICM) is an overarching concept that brings together, in a comprehensive and coordinated way, most of the principles and approaches that are identified and discussed in this study. The integrated approach to chemicals management considers the production, formulation and processing, transport, distribution, use, and disposal of chemicals. It includes links to cleaner production and pollution prevention and control. Four components of ICM are:

- *Life cycle approach* to address chemicals management topics from a holistic, “cradle-to-the-grave” (or “cradle-to-cradle”) perspective. This approach uncovers stages of the chemical life cycle, or elements within particular stages, that may otherwise fall through the cracks under existing, uncoordinated schemes (see also Section B.3 below);⁵

¹ OUR COMMON FUTURE: THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT (The Bruntland Report) (G. Brundtland ed., Oxford Press 1987).

² COPENHAGEN DECLARATION ON SOCIAL DEVELOPMENT AND PROGRAMME OF ACTION OF THE WORLD SUMMIT FOR SOCIAL DEVELOPMENT, para. 6, in *Report of the World Summit for Social Development*, U.N. WSSD, A/Conf.166/9 (1995).

³ UN Millennium Development Goals (MDGs).

⁴ UN GENERAL ASSEMBLY, UNITED NATIONS MILLENNIUM DECLARATION, UN Doc. A/Res/55/2 (2000).

⁵ UNITAR, *Planning and Implementing a National Action Programme for Integrated Chemicals Management* 12 (1997).

- *Stakeholder involvement* of all parties who have an interest in, or are affected by, chemicals management. Adequate consultation increases the likelihood that chemicals management policies will be successfully designed, implemented, and enforced;⁶
- *Coordination* across and between governments. At the national level, coordination among ministries and involvement of key constituencies, such as state and local authorities and industry and public interest groups, to minimize gaps, conflicting policies, and unnecessary overlaps, while contributing towards achievement of common goals. At the international level, coordination between the different international agreements, intergovernmental organizations, and discussion fora that are relevant to chemicals management; and
- *Synergies* that make the best use of available resources and avoid unnecessary duplication of effort by, for example, allowing joint projects that help implement several international agreements rather than just one, or by allowing countries to develop single, comprehensive inventories of chemicals rather than multiple inventories for different, overlapping agreements.⁷

1.2 Origin and Application

11. Agenda 21 reflected the need for integration by recommending coordinated and integrated approaches for the sound management of chemicals and wastes. Chapters 19 and 20 collectively proposed programs covering the main elements of integrated chemicals management, including: international assessment of chemical risks; harmonization of chemical classification and labeling; information exchange on chemicals and chemical risks; risk reduction; strengthening national capacities and capabilities for chemicals and hazardous waste management; prevention and minimization of hazardous waste; prevention of illegal international trade in toxic and dangerous products and hazardous wastes; and promoting and strengthening international cooperation in the management of transboundary movements of hazardous wastes.

12. For the national level, UNITAR and the participating organizations of the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) have sponsored a series of pilot projects since 1996 to assist developing countries and countries with economies in transition to develop and sustain integrated national programs for the sound management of chemicals and wastes. The pilot program seeks to provide a foundation for effective and coordinated action to address national chemicals and waste management priorities as well as the implementation of international chemicals and wastes-related agreements and initiatives.⁸

13. The major multilateral chemicals conventions have made efforts to use the integrated management approach in addressing the areas of chemicals and wastes management under their scopes. For example, the Basel Convention's "environmentally sound management" conceptual framework seeks to implement an integrated approach in dealing with hazardous wastes as follows: "Within the framework of integrated life-cycle management, prevention to the extent

⁶ *Id.* at 8.

⁷ UNITAR, *Developing and Sustaining an Integrated National Programme for Sound Chemicals Management* 23 (2004).

⁸ See, e.g., UNITAR, *Planning and Implementing a National Action Programme*; UNITAR, *Developing and Sustaining an Integrated National Programme*, *supra*.

possible and minimize the generation of hazardous wastes, treat and dispose in such a way as they do not cause harm to health and the environment, and eliminate or reduce transboundary movements of hazardous wastes.”⁹

14. For the intergovernmental level, the Intergovernmental Forum on Chemical Safety (IFCS) and the IOMC were both established to increase coordination and build capacities and necessary infrastructure to achieve a more integrated approach to chemicals management. And for the Global Environment Facility (GEF), an important issue for implementation of the Stockholm POPs Convention is consideration of synergies across the GEF focal areas and other international conventions. “Institutional synergies” will be necessary to maximize existing infrastructure and expertise developed under other chemicals conventions, as well as those developed in the broader context of integrated chemicals management at the country level.¹⁰ Similarly, the UNEP Governing Council has recognized the need for “support for enhancing collaboration among multilateral environmental agreement secretariats in specific areas where common issues arise, such as current work among the chemicals and waste multilateral environmental agreement secretariats and including the interim secretariats”¹¹

1.3 Relevance to the SAICM

15. Governments renewed their commitment to integrated chemicals management objectives at the WSSD, and further vowed to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment. Increasing the coherence, coordination, and capacity in chemicals management policies, their implementation, and their enforcement at the national, regional, and international levels are essential purposes of integrated chemicals management, as well as key objectives of the SAICM. Integrated chemicals management may thus be considered an overarching SAICM concept, because its elements implicate or incorporate nearly all of the principles and approaches that are relevant to the SAICM.

16. Despite increased awareness of the overarching nature and importance of integrated chemicals management, the vast majority of countries do not yet have fully functional or comprehensive national systems in place. Moreover, there is still much to be accomplished in achieving an effective level of coordination and synergy between the multilateral and regional chemicals conventions, the UN implementing agencies and other IGOs, sources of technical and financial assistance, and stakeholders. Designing, adopting, and implementing integrated chemicals management systems are fundamental steps for addressing these needs, and for ensuring success in achieving the SAICM 2020 goal.

⁹ University of Auckland, New Zealand & Basel Convention Secretariat, *Destruction and Decontamination Technologies for PCBs and Other POPs Wastes* 5 (2001).

¹⁰ Global Environment Facility, *Interim Report: Third Overall Performance Study of the Global Environment Facility* 38 (Feb. 2005).

¹¹ UNEP Governing Council, *International Environmental Governance*, Decision SS.VII/1 adopted at its seventh special session, para. 27 (Feb. 2002).

1.4 Inclusion in the Overarching Policy Strategy

17. Integrated chemicals management might be included among a list of principles and approaches in the OPS using the following language:

Integrated chemicals management, based upon the coordinated and integrated approaches for sound management of chemicals and wastes recommended in Chapters 19 and 20 of Agenda 21 and paragraphs 2 and 22 of the Plan of Implementation of the World Summit on Sustainable Development, and including: a life cycle approach that considers the development, production, formulation and processing, transport, distribution, use, and disposal of chemicals and chemicals in products from a holistic, life cycle perspective; stakeholder involvement of all parties who have an interest in, or might be affected by, chemicals management; coordination across and between governments, as well as intergovernmental organizations and institutions; and taking advantage of synergies that make the best use of available resources and that avoid unnecessary duplication of effort.

1.5 Relevant Concrete Measures

18. Because its elements implicate or incorporate nearly all of the principles and approaches that are relevant to the SAICM, integrated chemicals management may be considered an overarching SAICM concept that should inform implementation of all of the concrete measures that have been identified for inclusion in the SAICM, including those categorized under Objectives 1 through 5. Additionally, at PrepCom2, Costa Rica, Jamaica, Nigeria, Senegal, Sri Lanka, and Switzerland submitted a proposal to include national integrated chemicals management programs among the concrete measures.¹² This proposal reflects the value of these programs, especially to developing countries and countries with economies in transition, and it deserves to be given serious consideration by SAICM participants.

2. Inter-Generational Equity

2.1 Description and Main Elements

19. Inter-generational equity, another primary element of sustainability, is closely linked with integration, because it is based on the reality that the activities of preceding generations have affected the physical conditions of, and the choices available to, the present generation, and that the activities of the present generation will affect the physical conditions of, and the choices available to, future generations. Inter-generational equity means the present generation has a right to use and enjoy the resources of the Earth, but is under an obligation to take into account the long-term impact of its activities and to sustain the resource base and the global environment for the benefit of future generations of humankind.

¹² *Report of the Second Session of the Preparatory Committee for the Development of a Strategic Approach to International Chemicals Management*, annex IV, SAICM/PREPCOM.2/4 (Nov. 2004).

2.2 Origin and Application

20. The concept of inter-generational equity was adopted in 1992 at the Rio Conference as the framework for improving quality of life around the world.¹³ In specific respect to chemicals management, Chapter 19 of Agenda 21 notes that chemical contamination causes “grave damage to human health, genetic structures and reproductive outcomes.”¹⁴ Because chemical effects on genetic structures and reproductive outcomes threaten irreversible and potentially serious negative impacts on the health and well-being of future generations, Chapter 19 raises concerns of inter-generational equity.

21. For the above reasons, inter-generational equity considerations are implicitly present in all of the multilateral chemicals and chemicals-related agreements. Additionally, they appear explicitly in several. For example, the 1992 United Nations Framework Convention on Climate Change, Article 3.1, states that “Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.” The preamble to the Stockholm POPs Convention sums up very clearly why persistent organic pollutants threaten inter-generational equity, as parties state their awareness “of the health concerns, especially in developing countries, resulting from local exposure to persistent organic pollutants, in particular impacts upon women and, through them, upon future generations.”

2.3 Relevance to the SAICM

22. Society’s emerging awareness and understanding of the risks posed to future generations by many synthetic and human-produced chemical releases have become primary factors in the need for a strategic approach to international chemicals management. As reproductive and mutagenic toxicants, many of these substances may alter the genetic makeup or very existence of un-born generations, making them, in effect, subjects of a population-wide experiment to which they will not have the right of consent. Because persistent toxic chemicals can remain in the environment for decades, they can also cause direct health impacts on future generations. Moreover, stockpiled stores of chemicals and their wastes, whether from legally permissible activities or illegal trafficking, may burden future populations with clean-up costs and additional, harmful health and environmental impacts. For all of these reasons, inter-generational equity is a consideration that must inform how integrated chemicals management is practiced and, in turn, how the SAICM develops.

2.4 Inclusion in the Overarching Policy Strategy

23. Inter-generational equity might be included among a list of principles and approaches in the OPS using the following language:

Inter-generational equity, as set out in the pertinent provisions of the Rio Declaration on Environment and Development, including Principle 3, and Chapter

¹³ See UN GENERAL ASSEMBLY, RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT, Principle 3, A/CONF.151/26 (Vol. I) (1992) [hereinafter the Rio Declaration], (stating that “[t]he right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations”).

¹⁴ AGENDA 21: EARTH’S ACTION PLAN, chapter 19.2 (1992) [hereinafter Agenda 21].

19 of Agenda 21, noting that chemical contamination may cause grave damage to human health, genetic structures and reproductive outcomes, and governments and stakeholders should thus take particular account of the impacts that their decisions and actions in respect to chemicals management may have upon both present and future generations.

2.5 Relevant Concrete Measures

24. Because the welfare of future generations is a key reason for the necessity of the SAICM, all of the currently listed concrete measures are relevant to the prospects for chemicals management approaches to achieve inter-generational equity. This is especially so for those concrete measures listed under Objectives 1 (risk reduction) and 2 (information and knowledge). Specific references could also be inserted in Objective 1, the “Children and chemical safety” concrete measure, by adding this activity: “Establish needed infrastructure for research into the impact of exposure to chemicals on children, women, and future generations”; and in Objective 2, the “Children and chemical safety” concrete measure, by adding this activity: “Incorporate, in a precautionary manner, considerations of the health and welfare of future generations into all of these activities.”

B. Avoiding Harm and Managing Risk

1. Precaution

1.1 Description and Main Elements

25. Precaution—also referred to as the “precautionary principle” and the “precautionary approach”—is one of the most prominent and commonly encountered concepts of international and domestic environmental law. It is also one of the more controversial, because of disagreements over its precise meaning and legal status and because of concern that it may be misused for trade-protectionist purposes. As noted in the introduction, this study avoids the debate over whether precaution should be considered binding international law, and focuses instead on the question of how precaution might be concretely applied and implemented.

26. Probably the most widely accepted articulation of precaution is Principle 15 of the Rio Declaration, which provides:

In order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

27. This formulation may be viewed as a response to the growing appreciation of the scientific uncertainties about environmental degradation. As such, it reflects two important insights: (1)

we often cannot rely on scientific certainty for determining response measures, and (2) the consequences of not taking preventive measures early enough can be irreversible.¹⁵

28. Because Principle 15 is phrased in “negative” terms, i.e., “lack of full scientific certainty *shall not be used* as a reason for postponing cost-effective measures” (emphasis added), the question may arise as to *when* precaution should be applied. According to one prominent view,

Whether or not to invoke the Precautionary Principle is a decision exercised where scientific information is insufficient, inconclusive, or uncertain and where there are indications that the possible effects on the environment, or human, animal or plant health may be potentially dangerous and inconsistent with the chosen level of protection.¹⁶

29. An additional question is *how* precaution should be applied. The following criteria¹⁷ may be relevant:

- *Risk management*: Precaution should be invoked as part of a general risk analysis that leads to a decision against or in favor of taking action. This involves a political decision that depends on the level of risk that society considers to be “acceptable.”
- *Scientific assessment*: The application of precaution should be based on the most comprehensive scientific assessment possible. The extent of scientific uncertainty should be determined as far as possible.
- *Proportionality*: Risk management measures should be proportional to the chosen level of protection, and should take into account cost, effectiveness, and duration. Measures may include the provision of additional margins of safety for vulnerable groups such as children.¹⁸
- *Coherence*: Measures should be consistent with measures adopted in similar situations or based on similar approaches.
- *Trade restrictions*: Precaution should only be invoked if there is a potential risk. It should not be used to justify an arbitrary decision, nor should it aid or abet any disguised trade interests.
- *Intelligibility and review*: Response measures should be well-founded and intelligible; they should be regularly reviewed in light of new scientific findings and modified when necessary.
- *Transparency*: Risk analysis and management should be transparent, participatory, and accountable.

¹⁵ See Franz Xaver Perrez, *The World Summit on Sustainable Development: Environment, Precaution and Trade—A Potential for Success and/or Failure*, 12 RECIEL 15 (2003).

¹⁶ European Commission, *Communication from the Commission of 2 February 2000 on the Precautionary Principle*.

¹⁷ See Govt. of Switzerland, *The Precautionary Principle in Switzerland and Internationally* 16 (Synthesis Paper by the Interdepartmental Working Group on the Precautionary Principle 2003).

¹⁸ See, e.g., U.S. FOOD QUALITY PROTECTION ACT OF 1996, 7 U.S.C. §136.

1.2 Origin and Application

30. Precaution was a response to growing appreciation of the scientific uncertainties about environmental degradation and human health, and the realization that scientific “certainty” was not an appropriate prerequisite for taking action.¹⁹ While domestic environmental policy in Germany is often considered the starting point,²⁰ precaution’s development has also been linked to U.S. court decisions on health, safety, and the environment.²¹ The Rio Declaration’s Principle 15 was one of the first global codifications of precaution.

31. Precaution is a fundamental component of most of the multilateral chemicals and chemicals-related agreements, although not all of them contain the word “precaution.” For example, the waste prevention, reduction, and prior informed consent provisions of the Basel Convention collectively “reverse the burden of proof,” thereby allowing States to protect themselves against possible harms, without requiring them to show that a specific hazardous waste-related activity will actually cause them harm.²²

32. The Stockholm Convention is more explicit, stating “precaution underlies the concerns of all the Parties and is embedded within” the Convention.²³ Among its operative precautionary provisions, the Stockholm Convention requires parties that have the ability to assess and regulate new chemicals to regulate with the aim of preventing the production and use of new chemicals that exhibit the characteristics of persistent organic pollutants.²⁴ Parties must promote the development and, as appropriate, require the use of substitute or modified materials, products, and processes to prevent the formation and release of POPs.²⁵ Moreover, they must make decisions about listing additional POPs in the Convention “in a precautionary manner.”²⁶

33. As in the Basel Convention, the Rotterdam Convention’s prior informed consent procedure is key to allowing States that are potential importers of certain hazardous chemicals and pesticides to make their own determinations of the extent to which they would like to apply precaution regarding such imports. To enhance the ability of States to make such determinations (and to promote public awareness), the Rotterdam Convention states that “information on precautionary measures, including hazard classification, the nature of the risk and the relevant

¹⁹ Franz Xaver Perrez, *Precaution from Rio to Johannesburg: An Introduction*, in PRECAUTION FROM RIO TO JOHANNESBURG: PROCEEDINGS OF A GENEVA ENVIRONMENT NETWORK ROUNDTABLE 5-6 (May 2002).

²⁰ K. von Moltke, *The Vorsorgeprinzip in West German Environmental Policy*, in TWELFTH REPORT, ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION 57 (1988); Lothar Gündling, *The Status in International Law of the Principle of Precautionary Action*, 5 INT’L J. ESTUARINE & COASTAL L. 23, 23-25 (1990); Charles D. Siegal, *Rule Formation In Non-Hierarchical Systems*, 16 TEMP. ENVTL. L. & TECH. J. 173, 211 (1998).

²¹ Nicholas A. Ashford, *Implementing a Precautionary Approach in Decisions Affecting Health, Safety, and the Environment: Risk, Technology Alternatives, and Tradeoff-Analysis*, in THE ROLE OF PRECAUTION IN CHEMICALS POLICY (Elisabeth Freytag ed., Diplomatische Akademie Wien, 2002)

²² See BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL (1989) [hereinafter Basel Convention].

²³ STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS (POPs), preamble (2001) [hereinafter Stockholm Convention].

²⁴ *Id.* art. 3.3.

²⁵ *Id.* art. 5(c).

²⁶ *Id.* art. 8.9.

safety advice” shall not be regarded as confidential.²⁷ Additionally, all export notifications regarding listed chemicals that are subject to the PIC procedure must include information on precautionary measures to reduce exposure to, and emission of, the chemical.²⁸

34. Other formulations of precaution exist. One of the most forceful is found in the 1991 Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (Bamako Convention), which defines the precautionary approach as, inter alia, “preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm.”²⁹ The 1996 Protocol to the London (Dumping) Convention states, “In implementing this protocol, Contracting Parties shall apply a precautionary approach to environmental protection . . . when there is reason to believe that wastes or other matter introduced in the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects.”³⁰

35. What all of these legal instruments make clear is that, in the area of international chemicals management, precaution has evolved significantly since the Rio Conference. Its scope has expanded from environmental protection policies to include also the protection of human health. It has been formulated in an active way (e.g., the Stockholm Convention COP “shall decide, in a precautionary manner”) rather than a passive way (“lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures”). And the “cost-effective” qualifier of Principle 15 has been shown to apply to the *choice* of appropriate precautionary measures, but not to the decision of whether precautionary measures should be *taken*. Thus, while Rio Principle 15 remains an important landmark in the development of precaution, the concept has been operationalized in the several conventions and other legal agreements so that it is now broader and more concretely defined with regard to chemicals and waste management policies.

1.3 Relevance to the SAICM

36. Precaution applies to the international level, where it requires greater cooperation between state actors, and to the national level, where it can authorize decision-makers to respond proactively to potential harms in light of the growing understanding of the complex relationship between risk and scientific uncertainty. It is inextricably linked to the risk management concepts that collectively comprise integrated chemicals management. These include the life cycle approach, prevention, substitution, proportionality, polluter pays, and transparency. In setting out the 2020 goal that “chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment,” the WSSD Plan of Implementation requires Governments to take the precautionary approach into account, including in the development of the SAICM.³¹ Thus, in providing a strategic guide to international

²⁷ ROTTERDAM CONVENTION ON THE PRIOR INFORMED CONSENT PROCEDURE FOR CERTAIN HAZARDOUS CHEMICALS AND PESTICIDES IN INTERNATIONAL TRADE, art. 14.3 (1998) [hereinafter Rotterdam Convention].

²⁸ *Id.* annex V, para. 1.

²⁹ Bamako Convention, art. 4(3)(f) (1991).

³⁰ 1996 PROTOCOL TO THE [LONDON] CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER, art. 3.1 (1996).

³¹ WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT PLAN OF IMPLEMENTATION, para. 23 (2002) [hereinafter WSSD Plan of Implementation].

chemicals policy, the SAICM should aim to promote a common understanding of precaution for the benefit of all concerned stakeholders.

1.4 Inclusion in the Overarching Policy Strategy

37. Precaution might be included among a list of principles and approaches in the OPS using the following language:

Precaution, as set out in Principle 15 of the Rio Declaration on Environment and Development, and as further elaborated and defined in multilateral chemicals and wastes conventions and agreements, which have broadened the scope of precaution to include human health and have provided additional guidance for its use in decision making.

1.5 Relevant Concrete Measures

38. As a guide to decision makers for when and how to take action in the face of potentially serious threats and scientific uncertainty, precaution is relevant and should be applied to all of the concrete measures currently listed under Objective 1 (risk reduction). Additionally, methodologies for generating knowledge and information through risk assessment, management, and communication (listed under Objective 2) should be developed so that they incorporate precaution in a robust manner. The text for many of the listed activities under Objectives 1 and 2 could be strengthened by adding explicit references to precaution, especially for those activities related to addressing hazards where scientific information may be incomplete. Specific references could also be inserted in the “Children and chemical safety” concrete measure of Objective 1, by adding: “Enact and strengthen applicable chemicals safety law so that it takes into account, in a precautionary manner, the special vulnerabilities of children and future generations to impacts from chemicals, including through the establishment of additional margins of safety.”; and in the “Children and chemical safety” concrete measure of Objective 2, by adding: “Incorporate, in a precautionary manner, considerations of the health and welfare of future generations into all of these activities.”

2. Proportionality

2.1 Description and Main Elements

39. Proportionality is the notion that the effects of a countermeasure (such as a risk management strategy or regulation) should correspond in amount or degree to the effects of the injury suffered or the injury that is being avoided.³² Proportionality is a recognized principle in the law of war (for example, as it may apply to self-defense or the use of nuclear weapons), and it also appears in international trade law. In trade law, the concept sometimes translates into a “least-restrictive means” test, requiring that a regulation that impacts the free movement of goods

³² See *Case Concerning the Gabčíkovo-Nagymaros Project* (Hung. v. Slov.), 1997 ICJ REP. 92, para. 85 (1997).

must be “necessary” and must accomplish its objectives by the least-trade restrictive means possible.³³

2.2 Origin and Application

40. In the context of environment and sustainable development, proportionality may be viewed as an outgrowth of Principle 4 of the Rio Declaration, which states, “In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.” Principle 4 recognizes that, in many cases, when environmental (and, implicitly, health) measures are adopted without taking any account of their technical feasibility or economic impacts, they may fail to accomplish their objectives.

41. Some representatives of industry have advocated a “least-restrictive” or “least-burdensome means” test in the context of European chemicals policy. For example, the European Chemical Industry Council (Conseil européen de l’industrie chimique - CEFIC) has stated that “risk reduction measures ranging from simple warnings through to far-reaching interventions in production and marketing such as bans or limitations in use are only acceptable if less intense measures prove insufficient.”³⁴ When applied to chemicals regulation, however, this strong version of proportionality may result in regulators being unable to ban or severely restrict dangerous substances, even when their unreasonable risks are well known. In the United States, for example, the Toxic Substances Control Act (TSCA)³⁵ contains a least-burdensome means test that the courts have interpreted as requiring the U.S. Environmental Protection Agency (USEPA) to conduct extensive cost-benefit analyses for every possible risk management option before a chemical may be regulated. USEPA tried to ban asbestos in 1989. However, even though the agency had studied the issue for 10 years and produced an administrative record of 45,000 pages, a court voided the asbestos rule, because the court determined that USEPA had not studied the issue enough to satisfy TSCA’s least-burdensome means test.³⁶ USEPA has never finalized regulations to ban any other chemical under that test since then.

42. An overly strict application of the “least-restrictive” or “least-burdensome means” version of proportionality can make observance of precaution impossible. Thus, it is not found in modern multilateral environmental agreements, including chemicals management agreements. Formal cost-benefit balancing is also not present in MEAs.

43. Instead, some of the MEAs contain a milder version of proportionality that allows for the consideration of social and economic factors when determining how to respond to an environmental health risk. For example, in evaluating possible control measures for chemicals under consideration for inclusion in the Stockholm POPs Convention, the Convention requires the preparation of a risk management evaluation that takes into account (but does not apply a

³³ See *Commission of the European Community v. Kingdom of Denmark*, Case C-246/99 (2001) (overturning a Danish law that prohibited for environmental reasons the importation of beer and carbonated drinks in metal cans).

³⁴ European Chemical Industry Council (CEFIC), *Chemicals Management 2000+ Confidence in Chemicals: The View of the European Chemical Industry on the Future of European Chemicals Policy* (2000).

³⁵ 15 U.S.C. § 2601 *et seq.*

³⁶ See *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991).

balancing approach for) numerous socio-economic factors, among which are technical feasibility and costs, including environmental and health costs.³⁷

2.3 Relevance to the SAICM

44. The Stockholm Convention risk management factors referenced above are many of the same considerations that are essential for the implementation of the integrated chemicals management approach, which is an overarching approach of the SAICM. Stronger forms of proportionality, including least-burdensome/restrictive means tests and formal cost-benefit balancing, can prevent a precautionary approach and would be inappropriate for the SAICM, because they can make needed regulatory options for risk management difficult or impossible to adopt, and because they can prevent the implementation of integrated chemicals management strategies.

2.4 Inclusion in the Overarching Policy Strategy

45. Proportionality might be included among a list of principles and approaches in the OPS using the following language:

Proportionality, meaning that measures taken to protect human health and the environment should be proportional to the chosen level of protection, taking into account technical and economic feasibility and other relevant factors; reaffirming that it is the sovereign right of States, subject to applicable standards established by international legal instruments, to choose their own levels of protection for human health and the environment.

2.5 Relevant Concrete Measures

46. Proportionality is relevant to all of the activities of a regulatory nature that are listed under Objective 1 (risk reduction); it should be taken into account by stakeholders, especially national governments, as they devise protective measures to implement chemicals management strategies.

3. Life Cycle Approach

3.1 Description and Main Elements

47. The life cycle approach—also known as “life cycle analysis,” “life cycle assessment,” or “life cycle management”—addresses the entire life cycle of a product, process, or activity, including research and development; extracting and processing raw materials; manufacturing, transportation and distribution; use, re-use, and maintenance; and recycling and final disposal.³⁸ As a core component of integrated chemicals management, the life cycle approach is a tool for conducting a systematic, cradle-to-grave (or cradle-to-cradle) analysis to estimate the environmental consequences of alternative materials, designs, manufacturing processes, product use patterns, and end of life alternatives.

³⁷ Stockholm Convention, annex F.

³⁸ See David M. Boje, “Green Life Cycle and Accounting Praxis” (October 23, 1999), available at <http://web.nmsu.edu/~dboje/TDgreenlifecycle.html> (last viewed May 25, 2005).

48. Most life cycle studies follow guidelines established by the International Organization for Standardization (ISO) under its “14040 Series.” The guidelines set out four basic steps:³⁹

- *Goal and scope definition*, to identify the purpose of the study and establish its boundaries, such as geography and time;
- *Inventory analysis*, to quantify and categorize all the energy, water, and materials flowing into and out of every process in the subject’s life-cycle, including pollutants;
- *Impact assessment*, to relate the results of the inventory to actual (or assumed) impacts based on a series of environmental indicators, such as global warming potential, human toxicity, and resource depletion; and
- *Interpretation and conclusions*, to inform policy, development, market, and other kinds of decision-making.

3.2 Origin and Application

49. Life cycle analysis and assessment began to be employed as a tool for informing hazardous wastes management in the late 1970s and 1980s.⁴⁰ Later, Chapters 19 and 20 of Agenda 21 encouraged governments, with the cooperation of relevant international organizations and industry, to adopt policies and undertake activities that take into account the entire life cycle of chemicals and a cradle-to-grave approach to the management of hazardous wastes. The WSSD Plan of Implementation renewed Agenda 21’s commitment to sound management of chemicals throughout their life cycle and thus included the life cycle approach as a key tool for achieving the 2020 goal of minimizing significant adverse effects on human health and the environment.⁴¹ Similarly, the revised FAO Pesticides Code of Conduct, adopted in 2002 to establish voluntary standards of conduct for all public and private entities engaged in or associated with the distribution and use of pesticides, applies the life cycle approach to all of the standards set forth under the Code.⁴²

50. The life cycle approach is an essential part of the strategies of several chemicals conventions for protecting human health and the environment. The Basel Convention takes an integrated life cycle approach to environmentally sound management of wastes by emphasizing policies and practices aimed at prevention, waste minimization, recycling, recovery, treatment, and destruction or disposal of existing wastes. While the first decade after the Basel Convention’s entry into force focused on the Convention’s provisions on the transboundary movement of wastes, the strategy for its next phase gives priority to building national capacity for environmentally sound waste management based in large part on the life cycle approach.⁴³

³⁹ *Life-Cycle Assessment for Buildings: Seeking the Holy Grail Feature*, ENVIRONMENTAL BUILDING NEWS (March 2002).

⁴⁰ Susan Svoboda, *Note on Life Cycle Analysis* (National Pollution Prevention Center for Higher Education, March 1995).

⁴¹ WSSD Plan of Implementation, para. 23.

⁴² FOOD AND AGRICULTURE ORGANIZATION COUNCIL, INTERNATIONAL CODE OF CONDUCT ON THE DISTRIBUTION AND USE OF PESTICIDES, art. 1.7 (2002).

⁴³ See Basel Convention, *Mobilizing Resources for a Cleaner Future: Implementing the Basel Convention*, UNEP/CHW.7/INF/8 (2004).

51. The Stockholm POPs Convention’s provisions dealing with production (whether intentional or unintentional), use, trade in, and destruction of persistent organic pollutants are collectively designed to prevent adverse effects caused by POPs at all stages of their life cycle.⁴⁴ The Rotterdam Convention’s prior informed consent procedure requires exporting countries of banned or severely restricted chemicals to advise and assist importing parties, upon their request, to strengthen their abilities to manage chemicals safely during their life cycle.⁴⁵ The Rotterdam Convention also asks parties to take into account the needs of developing countries and countries with economies in transition by providing technical assistance and training in the development of infrastructure and capacity to manage chemicals throughout their life cycle.⁴⁶

3.3 Relevance to the SAICM

52. The life cycle approach is an essential tool for the environmentally sound management of chemicals. Like many of the concepts discussed in this study, the life cycle approach has a high level of interconnectedness with other key principles and approaches in environmental law and chemicals management, including precaution, prevention, substitution, and others. Thus, the life cycle approach is a key component of integrated chemicals management, which is a foundational concept underlying the SAICM. This is reflected in the WSSD Plan of Implementation, which provides the basis for the SAICM as part of a renewed commitment by governments to sound management of chemicals throughout their life cycle.⁴⁷

3.4 Inclusion in the Overarching Policy Strategy

53. Because the life cycle approach is a core component of integrated chemicals management (ICM), it may be appropriate to include the life cycle approach in the OPS as part of the description of ICM, rather than to list it as a separate principal or approach (see Section A.1.4 above).

3.5 Relevant Concrete Measures

54. “Life cycle” is currently listed as a concrete measure under Objective 2 (information and knowledge). As noted in Section 3.1 above, the life cycle approach is a tool for conducting systematic analyses of the environmental consequences of alternative materials, designs, manufacturing processes, product use patterns, and end of life alternatives. Thus, the approach is intended to generate information and knowledge, and is appropriately listed under Objective 2. However, the purpose of that information is to apply it to chemicals management in order to reduce risk. Accordingly, the life cycle approach should also be seen as a tool for risk reduction, and should be listed as a discrete concrete measure under Objective 1 (risk reduction).

⁴⁴ See arts. 3, 5-6; annexes A-C.

⁴⁵ Art. 11.1(c).

⁴⁶ Art. 16.

⁴⁷ WSSD Plan of Implementation, para. 23.

4. Prevention

4.1 Description and Main Elements

55. The idea that “an ounce of prevention is worth a pound of cure” is common to nearly every culture.⁴⁸ In international environmental law, prevention deals with the question of how harm to human health and the environment can be averted, recognizing that the economic and social costs of avoiding damage and injury are nearly always less than the costs of repair, treatment, or compensation after they happen. Prevention assumes an “overriding importance in every effective environmental policy, since it allows action to be taken to protect the environment at an earlier stage.”⁴⁹

4.2 Origin and Application

56. Prevention is at the core of proposed actions in Agenda 21’s chapters on chemicals and waste management, and also the “Reducing health risks from environmental pollution and hazards” Program Area of Chapter 6 (Protecting and Promoting Human Health). All three of these chapters recommend minimizing risks to human health and the environment through preventive means, such as: controlling the distribution and use of pesticides (Chapter 6); expanding international assessment of chemical risks, exchanging information regarding toxicity and risks, establishing risk reduction programs, strengthening national chemicals management capabilities, and preventing illegal traffic of chemicals (Chapter 19); and promoting prevention of hazardous wastes, strengthening institutional capacities in hazardous waste management, and preventing illegal international traffic in hazardous wastes (Chapter 20).

57. Prevention is also at the core of most of the multilateral chemicals agreements. For example, the Basel Convention requires parties to prevent and punish illegal traffic of hazardous wastes, and the Convention’s Ban Amendment prohibits (prevents) Organization for Economic Co-operation and Development (OECD) countries from shipping hazardous wastes to non-OECD countries.⁵⁰

58. The Stockholm POPs Convention contains preventive measures such as bans, restrictions, and technology standards to reduce or eliminate releases of POPs from intentional production and use, as well as unintentional production caused by activities such as incineration, cement making, etc.⁵¹ Recognizing that the “dirty dozen” POPs originally listed in the Convention comprise only a fraction of these problematic chemicals, governments also agreed to a science-based process for adding other POPs, to prevent further harm they may cause.⁵² It should be noted that for human-produced substances that may persist in the environment for decades or even hundreds of years, prevention may be the *only* way to mitigate their damage.

⁴⁸ This ancient proverb was first recorded in Latin in Henry de Bracton's *De Legibus* (c. 1240) and has been repeated ever since, often in shortened form. CHRISTINE AMMER, *THE AMERICAN HERITAGE DICTIONARY OF IDIOMS* (Houghton Mifflin Company: 1997).

⁴⁹ L. Kramer, *EEC Treaty and Environmental Protection*, 61 THOMSON PROFESSIONAL PUB CN (1990).

⁵⁰ Basel Convention, Decision III/1 Adopted by the Third Conference of the Parties, art. 4A (Basel Ban Amendment, 1995, not yet entered into force).

⁵¹ Stockholm Convention, arts. 3, 5.

⁵² *Id.* art. 8.

59. The same precautionary reasoning applies to the preventive measures of the Montreal Protocol on Substances that Deplete the Ozone Layer (preventing further damage to the ozone layer by phasing out ozone-depleting substances) and the Framework Convention on Climate Change and its Kyoto Protocol (preventing “dangerous anthropogenic interference with the climate system” by curtailing the production of excess greenhouse gases).⁵³ Similarly, prior informed consent procedures give prospective importing states the opportunity to prevent import of potentially harmful substances, before they can cause damage to their citizens or environment.

4.3 Relevance to the SAICM

60. The concept of prevention is ubiquitous in international chemicals management law, because it is the goal of most of the principles and approaches that collectively make up or inform that law. Phase-outs of certain classes of chemicals (such as POPs), substitution of dangerous chemicals and processes, precaution, polluter pays (i.e., the internalization of pollution costs), transparency and right-to-know—all of these concepts and more are intended to help prevent harm to human health and the environment. Because it is deeply intertwined with nearly all aspects of chemical safety, including the life cycle and integrated chemicals management approaches, prevention of harm to human health and the environment is a basic objective and tool that should be a part of any meaningful strategic approach to international chemicals management.

4.4 Inclusion in the Overarching Policy Strategy

61. Prevention might be included among a list of principles and approaches in the OPS using the following language:

Prevention, as set out in Chapters 6, 19, and 20 of Agenda 21 and reaffirmed in the Plan of Implementation of the World Summit on Sustainable Development, to minimize risks to human health and the environment from pesticides, other chemicals, and hazardous wastes by developing and enhancing distribution controls, assessment of risks, information exchange, institutional management capabilities, cleaner production, and the prevention of illegal trafficking, with a view to preventing harm from occurring rather than dealing with it only after it has occurred.

4.5 Relevant Concrete Measures

62. Because it assumes an “overriding importance in every effective environmental policy,” prevention should be viewed as an important goal for all aspects of chemicals management, and thus for all of the concrete measures listed under Objectives 1 through 5.

⁵³ THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE, art. 2 (1992).

5. Substitution (Alternatives)

5.1 Description and Main Elements

63. When a chemical product may cause risks to human health or the environment, it should be avoided if products or processes that are less dangerous can reasonably be used instead.⁵⁴

“Substitution” can be accomplished directly, by finding an alternative substance to do the same task, or indirectly, by finding alternative technologies or processes that make use of the dangerous chemical unnecessary. Substitution in chemicals management is characterized by the following elements:

- *Substitutes should be less hazardous and should present fewer risks:* Chemicals used as substitutes should be safe or safer than the chemicals they are replacing.
- *Substitutes should be monitored:* To ensure substitutes are not themselves hazardous, they should be monitored over the long term.
- *Continued use may be authorized under limited circumstances when a suitable substitute is not reasonably available:* Chemicals that are known to be hazardous can sometimes be allowed to remain in use for limited, specific purposes if those purposes are deemed essential and no suitable or reasonably available substitutes have been found.
- *Research should be conducted to find substitutes:* Finding suitable substitute substances or alternative technologies often requires resource-intensive research that can benefit from cooperation between States.
- *Information, research, and technology concerning substitutes should be exchanged:* The international community recognizes that information about the availability of viable substitutes must be freely exchanged in order for all countries to have access to them, especially developing countries and countries with economies in transition.

5.2 Origin and Application

64. Substitution is not a new concept. When Thomas Midgely developed chlorofluorocarbons (CFCs) for use in refrigerators and air conditioners in 1928, he was replacing ammonia, the highly toxic refrigerant in use at that time. CFCs looked like the perfect chemicals for the job. They were non-poisonous, nonflammable, and had chemical properties that made them good refrigerants.⁵⁵ Yet in the 1970s, scientists found that Midgely’s “harmless” CFCs play a significant role in destroying the ozone layer, thus threatening not just individuals, but the entire globe. CFCs were banned, and new substitute refrigerants had to be found.

65. Substitution is now an explicit component of integrated chemicals management and international chemicals law. Chapter 19 of Agenda 21 recommended strengthening research on

⁵⁴ See Sweden, Implementation of the Environmental Code Act (1998:811) in Vibeke Bernson et al., Swedish Chemicals Inspectorate, *Swedish Legislation and Practise in Implementing the Substitution Principle*, at 1, 2004-12-20 rev 2 (2004).

⁵⁵ See Vivian Sheridan, “Seventy Years of Safety: Fluorocarbon Refrigerants,” available at http://www.dupont.com/suva/emea/pdf/ref_history.pdf (last viewed May 26, 2005).

safe and safer alternatives to toxic chemicals and reducing risk by using other chemicals and non-chemical technologies.⁵⁶

66. These sentiments mirror provisions in the Montreal Ozone Protocol, which require Parties to “co-operate . . . in promoting . . . research, development and exchange of information on . . . possible alternatives to controlled substances, to products containing such substances, and to products manufactured with them.”⁵⁷ The Stockholm POPs Convention has similar requirements, and adds special consideration to cooperate in improving the capabilities of developing countries and countries with economies in transition to develop and use alternatives.⁵⁸ The Stockholm Convention also requires alternatives assessments in the construction of new waste disposal facilities, including evaluations to determine whether resource recovery, reuse, recycling, and promoting products that generate less waste could lessen the need for such facilities.⁵⁹ The Montreal Protocol, Stockholm Convention, and Rotterdam Convention on Prior Informed Consent all take special note of the importance of informing, increasing awareness, and educating the public about alternatives and alternative processes.

67. The Montreal Protocol and Stockholm Convention both make important concessions to States to promote alternatives or suspend prohibitions when suitable alternative substances or technologies are not yet available. For example, under the POPs Convention, DDT can continue to be used, but only for disease vector control, and only when “locally safe, effective and affordable alternatives are not available” to a Party.⁶⁰ The POPs Convention also requires its Conference of the Parties to consult with the World Health Organization every three years to evaluate the continued need for DDT and the “availability, suitability and implementation of the alternatives.”⁶¹

68. Possible alternative chemicals should be evaluated with respect to their entire life cycle. Thus, cleaner production is an important goal of substitution and alternatives assessment. The Intergovernmental Forum on Chemical Safety (IFCS) Bahia Declaration called on all stakeholders to engage and join in a common effort to promote global cooperation for cleaner processes, materials, and products.⁶² Among the IGOs, UNIDO and UNEP have been leaders in the development of pilot projects intended to implement alternative, cleaner production processes that result in reduced pollution loads.⁶³ In the agricultural arena, FAO, UNDP, UNEP, and the World Bank established the Global IPM [integrated pest management] Facility to assist countries

⁵⁶ Agenda 21, chapter 19.21, 19.44, 19.49.

⁵⁷ MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER, as amended, art. 9.1(b) (2000).

⁵⁸ Stockholm Convention, art. 11.2.

⁵⁹ *Id.* annex C, part V, A(f).

⁶⁰ *Id.* annex B, part II, para. 2.

⁶¹ *Id.* para. 6.

⁶² INTERGOVERNMENTAL FORUM ON CHEMICAL SAFETY (IFCS), BAHIA DECLARATION ON CHEMICAL SAFETY, declaration II, para. 1, IFCS/FORUM III/23w (2000).

⁶³ See UNIDO, *Information Document on Cleaner Production Provided by the United Nations Industrial Development Organization*, SAICM/PREPCOM.2/INF/4 (2004); UNEP, *The National Cleaner Production Centres: Building and Supporting Local Capacity* (undated), <http://www.uneptie.org/pc/cp/ncpc/NCPCs%20Note.doc>.

in the development and application of alternatives to unsustainable pest management practices, including the overuse of harmful pesticides.⁶⁴

5.3 Relevance to the SAICM

69. As Agenda 21 makes clear, a substantial use of chemicals is essential to meet the social and economic goals of the world community; however, releases of toxic chemicals can create grave damage to the environment and the health of present and future generations. Substitution of toxic chemicals and processes with safer alternatives is an important tool for enhancing human and environmental health while maintaining—and in many cases advancing—economic development goals. Hence, substitution plays a significant role in integrated chemicals management and in a strategic approach to international chemicals management.

5.4 Inclusion in the Overarching Policy Strategy

70. Substitution might be included among a list of principles and approaches in the OPS using the following language:

Substitution, as set out in Chapters 19 and 20 of Agenda 21, to strengthen research on safe and safer alternatives to toxic chemicals and to reduce risk by using other chemicals and non-chemical technologies, to require or provide incentives for cleaner production methods and alternatives for processes and substances that result in the generation of hazardous wastes, and to prohibit specific uses of substances or processes for which less hazardous substances or processes are available.

5.5 Relevant Concrete Measures

71. As an important tool for reducing the risks from dangerous chemicals, substitution is relevant to, and is already included as an activity in, several of the concrete measures listed under Objective 1 (risk reduction) and Objective 4 (capacity building and technical cooperation). Moreover, several of the concrete measures listed under Objective 2 (information and knowledge) are drivers or necessary predicates for successful substitution policies. Additional, specific references could be included as activities for the “Risk assessment, management and communication” concrete measures of Objectives 1 and 2 by adding under each Objective: “Promote the incorporation of hazard assessment and the analysis of safe and safer alternatives into risk management, product design, and permitting processes.”

6. Internalization of Costs (Polluter Pays)

6.1 Description and Main Elements

72. The polluter pays principal integrates environmental protection, social development, and economic activities by using market and/or regulatory instruments to ensure that persons who are responsible for pollution bear the full environmental and social costs of their activities, and that

⁶⁴ See generally, Global IPM Facility website, http://www.fao.org/ag/AGP/AGPP/IPM/gipmf/en/01_facility/01a.htm.

those costs are reflected in the market price for goods and services.⁶⁵ Agenda 21 identifies the elements of polluter pays as follows:

[Incorporation of] environmental costs in the decisions of producers and consumers, to reverse the tendency to treat the environment as a “free good” and to pass these costs on to other parts of society, other countries, or to future generations;

[I]ntegration of social and environmental costs into economic activities, so that prices will appropriately reflect the relative scarcity and total value of resources and contribute towards the prevention of environmental degradation.⁶⁶

6.2 Origin and Application

73. During the 1970s, the OECD recommended that companies should be responsible for the full costs of complying with pollution control laws and that government should not provide subsidies to offset such costs. By ensuring that “the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption,” OECD members intended to encourage the rational use of scarce resources and to avoid distortions in international trade and investment.⁶⁷

74. At the 1992 Rio Conference, the polluter pays principle was described extensively in Agenda 21 and was included as Principle 16 in the Rio Declaration:

National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

75. Principle 16 is specifically reaffirmed in the preambular section of the Stockholm Convention. The WSSD Plan of Implementation, in encouraging and promoting the development of a 10-year framework of programs in support of regional and national initiatives to accelerate the shift towards sustainable consumption and production, also recognizes the necessity of adopting and implementing the polluter pays principle, as it is described in Rio Principle 16.⁶⁸ Moreover, at the First Global Ministerial Environment Forum in Malmö, Sweden in May 2000, governments reasserted the continuing importance of the polluter pays principle in the Malmö Ministerial Declaration.⁶⁹

⁶⁵ See DAVID HUNTER ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 412 (2d ed., 2002).

⁶⁶ Agenda 21, chapter 8.31.

⁶⁷ OECD Council, *Recommendation of the Council on Guiding Principles concerning International Economic Aspects of Environmental Policies*, C(72)128 (1972).

⁶⁸ WSSD Plan of Implementation, para. 15(b).

⁶⁹ UNEP GLOBAL MINISTERIAL ENVIRONMENT FORUM (GMEF), *MALMÖ MINISTERIAL DECLARATION* (2000).

6.3 Relevance to the SAICM

76. Because it requires the internalization of pollution costs, the polluter pays principle, when applied “upstream” to producers, can provide a strong incentive for producers to minimize and prevent the production of pollution-causing substances and activities, including through the development of less-polluting alternatives. Similarly, the price signal of internalized costs can guide consumers towards demanding and choosing cleaner alternatives. Hence, polluter pays can be a cost-efficient means of minimizing significant adverse effects of chemicals on human health and the environment, and can be an important tool for meeting the SAICM 2020 goal.

6.4 Inclusion in the Overarching Policy Strategy

77. Internationalization of costs might be included among a list of principles and approaches in the OPS using the following language:

The internalization of costs (polluter pays), as set out in Agenda 21, Principle 16 of the Rio Declaration on Environment and Development, and Paragraph 15(b) of the Plan of Implementation of the World Summit on Sustainable Development, by using economic and other appropriate instruments to ensure that prices reflect the full social and environmental costs of chemicals and chemicals-related products, and that producers and consumers incorporate those costs into their decisions rather than pass the costs on to other parts of society, other countries, or to future generations.

6.5 Relevant Concrete Measures

78. Implementing internalization of costs/polluter pays approaches could help advance all or nearly all of the concrete measures listed under Objective 1 (risk reduction). Specific references could be inserted in the “Highly toxic pesticides” and “PBTs” concrete measures, by adding this additional activity to each: “Develop economic and other appropriate instruments that require producers of chemicals to internalize the full environmental and health costs of their products throughout their life cycles.”

79. Polluter pays is also an important consideration for concrete measures listed under Objective 3 (governance), including social and economic considerations and promoting industry participation and responsibility. A specific reference could be inserted in the “Promote industry participation and responsibility” concrete measure, by adding: “Promote corporate social responsibility for the safe production and use of all products, including through the development of economic and other appropriate instruments that require producers to internalize the full environmental and health costs of their products throughout their life cycles.”

80. Depending on how they are implemented, polluter pays approaches could also be important sources of finance for capacity building to support national actions. A specific reference could be inserted in Objective 4, the “Capacity building to support national actions” concrete measure, by adding: “Explore the development of innovative ways to access private-sector finance and financial resources to support capacity building for national actions, including economic and other appropriate instruments that require producers to internalize the full environmental and health costs of their products throughout their life cycles.”

C. Transparency, Participation, and Governance

1. Public Participation

1.1 Definition and Elements

81. Public participation in environmental matters is defined by three “pillars”: (1) access to information, (2) access to decision-making, and (3) access to justice.⁷⁰

82. *Access to information* means the public should be able to obtain environmental information with only limited, explicitly defined exceptions.⁷¹ Effective access includes ensuring that public authorities make environmental information available to the public in a transparent manner. (“Right-to-know” mechanisms are an important component of the access to information pillar; they are dealt with in more detail in Section C.2 below.)

83. *Access to decision-making* means the public should be able to participate in the environmental decision-making process and have its input taken into account. Meaningful access to decision-making requires that the concerned public receive notice of environmental decision-making processes at an early stage and in an adequate, timely and effective manner. Clear and transparent provisions should exist for interested persons and groups to submit information, comments, or analysis relevant to the issue. Moreover, decision-makers should genuinely take into account the outcomes of this public input, and should promptly inform the public of their decisions.⁷²

84. *Access to justice* means individuals and groups should have opportunities for redress when authorities fail to comply with their duties to provide access to information or decision-making.⁷³ This pillar finds its expression more in national law than in multilateral environmental agreements. Thus, most MEAs, including the chemicals agreements, do not give individuals the right to petition their governments or international organizations for redress when their access rights to environmental information and decision-making have not been honored. Instead, in the context of MEAs, in which the obligations of sovereign states are directed towards each other rather than towards their respective citizens, the focus of the access to justice pillar may most appropriately be on the role the public and NGOs can play in facilitating compliance with, and implementation of, the provisions of an MEA.

1.2 Origin and Application

85. Agenda 21 and Principle 10 of the Rio Declaration established the framework for public participation in the various multilateral environmental agreements adopted at, or developed after, the 1992 Rio Conference. In Rio Principle 10, nations agreed to facilitate and encourage public awareness and participation in environmental issues, and to provide effective access to judicial and administrative remedies.

⁷⁰ These pillars are derived from Principle 10 of the Rio Declaration and are further elaborated in the AARHUS CONVENTION ON ACCESS TO INFORMATION, PUBLIC PARTICIPATION IN DECISION-MAKING, AND ACCESS TO JUSTICE IN ENVIRONMENTAL MATTERS (1998) [hereinafter Aarhus Convention].

⁷¹ Aarhus Convention, art. 4.

⁷² *Id.* art. 6.

⁷³ *See id.* art. 9.

86. The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters provides the most comprehensive articulations of Principle 10 to be found in a binding multilateral agreement. The Convention provides the public and NGOs in member States with common tools and standards for monitoring performance and engaging in environmental decision-making. The Convention specifically applies to the rules by which State parties allow public participation in their national governance processes. It also requires parties to apply its principles in any international agreements to which they accede.⁷⁴

87. All of the major multilateral chemicals agreements provide significant opportunities for the public to obtain information about their proceedings and decision-making. For example, the Stockholm Convention requires each party to promote and facilitate, especially for women, children and the least educated, educational and public awareness programs on POPs, as well as on their health and environmental effects and on their alternatives.⁷⁵ The conventions are generally very receptive to allowing non-party observers to attend official meetings. Rules for such participation are spelled out in the conventions' respective rules of procedure, and are elaborated by informal understandings based on prior practice. In the convention context, "access to decision-making" means having the opportunity to try to influence decision making by observing convention meetings, speaking formally and informally with government representatives, and presenting policy and advocacy papers.

88. The IFCS has developed uniquely inclusive, open processes for stakeholder participation. With limited exceptions, all participants—governments, intergovernmental organizations, and NGOs (including business, public interest, and labor representatives)—enjoy similar rights to participate in discussions during meetings, as well as decision-making, which is done by consensus.

89. An increasingly important function of public participation is supplementing the capacity of States to monitor and enforce compliance with treaty commitments once a multilateral environmental or resource management agreement has entered into force. Non-governmental organizations and individuals can act as independent fact-finders and analysts, identifying incidences of non-compliance and ways to improve reporting and accountability mechanisms. This function has been key to the successful implementation of the Convention on International Trade in Endangered Species (CITES).⁷⁶ The function has also been important in the identification and exposure of illegal activities involving ozone depleting substances and the transboundary movement of hazardous wastes.

1.3 Relevance to the SAICM

90. The SAICM PrepCom process has substantially followed the participatory practices established under the IFCS. This reflects the recognition that a key component of integrated chemicals management is the involvement of stakeholders who have an interest in, or are

⁷⁴ *Id.* art. 3.7.

⁷⁵ See Stockholm Convention, art. 10.1(d).

⁷⁶ See Glenn M. Wiser, *Transparency in 21st Century Fisheries Management: Options for Public Participation to Enhance Conservation and Management of International Fish Stocks*, 4 J. INT'L WILDLIFE L. 95, 102 (2001).

affected by, chemicals issues.⁷⁷ The exercise of all three of the pillars of public participation at the international and national levels will be essential to ensure the SAICM's success in achieving the 2020 goal. Additionally, the ability of non-governmental organizations and qualified individuals to assist parties by performing monitoring or verification services and providing compliance-related information could prove helpful in addressing the problem of illegal traffic of hazardous chemicals and wastes.

1.4 Inclusion in the Overarching Policy Strategy

91. Public participation might be included among a list of principles and approaches in the OPS using the following language:

Public participation, including equal access and participation by women, as set out in Principle 10 of the Rio Declaration on Environment and Development and in the Plan of Implementation of the World Summit on Sustainable Development, providing for public access to information concerning the environment that is held by public authorities, the opportunity to participate in decision-making processes, and effective access to judicial and administrative proceedings, including redress and remedy.

1.5 Relevant Concrete Measures

92. Public participation—including access to environmental information, decision-making, and appropriate redress—should be a component of all of the concrete measures listed under Objectives 1-5 that may be implemented by governments. Additionally, under Objective 2 (information and knowledge), the concrete measure “Stakeholder participation” could contain this specific activity, “Ensure full, timely access to all information regarding chemicals management that relates to health and safety of humans and the environment.”

2. Right to Know

2.1 Definition and Main Elements

93. The *right to know* refers to the general public's right to access information regarding the risks to human and environmental health from chemicals, including chemical accidents, manufacturing, use, and disposal. The right to know is thus a distinct iteration of one of the three “pillars” of public participation, access to information. The right to know should be enjoyed by any person. When the right is exercised, there should be a presumption in favor of access to information unless that information is specifically exempted. To be useful, information should be provided in a timely manner and in a readily comprehensible and accessible form.⁷⁸

94. Pollutant Release and Transfer Registers (PRTRs) are an important mechanism for exercising the right to know. PRTRs are inventories of pollution releases from industrial and

⁷⁷ See, e.g., UNITAR, *Developing and Sustaining an Integrated National Programme for Sound Chemicals Management* 22 (2004).

⁷⁸ Aarhus Convention, art. 4.

other sites that are kept by national governments and IGOs.⁷⁹ These databases allow the public to access information concerning their local environment. The existence of PRTRs can help facilitate decreases in pollution, because most companies do not wish to be seen by the public as big polluters.

2.2 Origin and Application

95. The right to know is clearly embodied in the 1992 Rio Declaration and Agenda 21. Rio Principle 10 states that “each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities.”⁸⁰ Principle 10 adds that nations should “facilitate and encourage public awareness” by making such information available. More specifically, Chapter 19 of Agenda 21 encourages industry voluntarily to adopt “community right-to-know programmes . . . including sharing of information on causes of accidental and potential releases and means of preventing them, and reporting on annual routine emissions of toxic chemicals to the environment in the absence of host country requirements.”⁸¹

96. The two most recent global chemicals conventions address the right to know in different ways. Like the Basel Convention, the Rotterdam PIC Convention requires the prior informed consent of States, not the general public, to the transboundary shipment of regulated substances. However, two provisions indicate that information should be publicly available. Article 14.1(b) states that the “provision of publicly available information on domestic regulatory actions [is] relevant to the objectives” of the Convention. Article 15.2 states that the “public [shall have] appropriate access to information on chemical handling and accident management and on alternatives that are safer for human health or the environment.”

97. The Stockholm Convention on Persistent Organic Pollutants (POPs) more explicitly includes a public right to know. The Convention states that information on health and safety should not be regarded as confidential,⁸² and it requires each Party to promote and facilitate the provision of all available information on POPs to the public.⁸³ Similarly, Convention 170 of the International Labour Organization (ILO) provides concerned workers with the right to information on the identity of chemicals used at work, their hazardous properties, precautionary measures, and any other information required to be kept by the Convention.⁸⁴

98. Many States already have national pollutant release and transfer registers, including the United States, Canada, Mexico, the European Union, Switzerland, the Czech Republic, and Australia.⁸⁵ In 2003, parties to the Aarhus Convention adopted the Kiev Protocol on Pollutant

⁷⁹ See United Nations Economic Commission for Europe, “Protocol on Pollutant Release and Transfer Registers,” <http://www.unece.org/env/pp/prtr.htm> (last viewed May 26, 2005).

⁸⁰ Rio Declaration, Principle 10,

⁸¹ Agenda 21, chapter 19.50.

⁸² Stockholm Convention, art. 9.5.

⁸³ *Id.* art. 10.1.

⁸⁴ INTERNATIONAL LABOUR ORGANIZATION, CONVENTION 170 CONCERNING SAFETY IN THE USE OF CHEMICALS AT WORK, art. 18.3 (1990).

⁸⁵ For descriptions of some State programs, see Clary-Meuser Research Network, “Global Right-To-Know Resources,” <http://www.mapcruzin.com/globalchem.htm>, and Working Group on Community Right-to-Know, “International: Governmental Initiatives,” <http://www.crtk.org/international.cfm> (last viewed May 26, 2005).

Release and Transfer Rights.⁸⁶ This Protocol “is the first legally binding international instrument on pollutant release and transfer registers” and aims to enhance public access to information by requiring the establishment of more national PRTRs.⁸⁷ Additionally, numerous NGOs and some IGOs play an important role in publishing chemical safety and health information, and in developing PRTR capacity.⁸⁸

2.3 Relevance to the SAICM

99. Right to know laws can further the goal of chemical safety by creating incentives for industry to reduce pollution; by empowering citizens to make more informed decisions about the products they buy and the places they live and work; by providing citizens with the informational tools they need to demand enforcement of existing laws and the development of more effective chemical safety protections; and by prompting governments to collect information needed for adequate regulation. However, despite progress, most countries lack effective laws for tracking industrial pollution and honoring citizens’ rights to participate in environmental decision-making. Most right to know systems do not provide a single, integrated source for obtaining a complete pollution profile of a company, an industry, or a geographic area.⁸⁹ Additionally, confidential business information (CBI) rules (discussed in Section C.3 below) are frequently used to justify restricting the public’s right to information regarding the risks to human and environmental health from chemicals. Implementation of an integrated chemicals management approach should address these shortcomings; thus, the right to know warrants inclusion in the SAICM.

2.4 Inclusion in the Overarching Policy Strategy

100. The right to know might be included among a list of principles and approaches in the OPS using the following language:

The right to know, as set out in Principle 10 of the Rio Declaration on Environment and Development, providing that every individual should have access to information on hazardous materials and activities in their communities, and in Chapter 19 of Agenda 21, providing that the right of communities and workers to know the risks of chemicals is a prerequisite for achieving chemical safety, while acknowledging that the right to know the identity of hazardous ingredients is balanced with industry’s right to protect confidential business information; provided that, for purposes of the SAICM, information on health and safety of humans and the environment may not be regarded as confidential.

⁸⁶ UN ECONOMIC COMMISSION FOR EUROPE, KIEV PROTOCOL ON POLLUTANT RELEASE AND TRANSFER REGISTERS, ECE/MP.PP/2003/1 (2003).

⁸⁷ UNECE, “Protocol on Pollutant Release and Transfer Registers,” available at <http://www.unece.org/env/pp/prtr.htm>.

⁸⁸ See, e.g., the Right-to-Know Network, <http://www.rtknet.org/>; the Pesticides Action Network (PAN) Pesticides Database, <http://www.pesticideinfo.org/Index.html>; UNITAR Chemicals and Waste Management Programme, “Design and Implementation of National Pollutant Release and Transfer Registers (PRTRs),” <http://www.unitar.org/cwm/b/prtr/>

⁸⁹ Working Group on Community Right-to-Know, “Information Reform,” available at <http://www.crtk.org/informationreform.cfm>.

2.5 Relevant Concrete Measures

101. The success of all of the concrete measures for risk reduction listed under Objective 1 may be enhanced by the creation and implementation of effective right to know approaches. These approaches may be ensured through several of the concrete measures and activities listed under Objective 2 (information and knowledge), especially PRTRs and the access to information activities related to hazard data generation and availability; information management and dissemination; highly toxic pesticides risk management and reduction; risk assessment, management, and communication; occupational safety and health; and children and chemical safety.

3. Confidential Business Information

3.1 Definition and Main Elements

102. Confidential business information (CBI) is information provided by a business entity that cannot normally be disclosed by government to a third party (including, sometimes, other governments). CBI may contain trade secrets, commercial or financial information, or other information whose disclosure to a competitor could cause harm to the provider of the information.⁹⁰ The proprietary nature of some business information and the necessity for protecting legitimate trade secrets have long been recognized under the national legal systems of many States. Yet CBI protections that pertain to chemical safety can create tensions with a core concept of integrated chemicals management: the public's right to know about products and processes that may have a negative impact on health, safety, and the environment. In addition, when applied to the transfer of information between or within governments, CBI can interfere with a government's ability to regulate effectively. Accordingly, the way CBI is protected and defined—and by whom—can be key to achieving an appropriate balance between the respective needs of business and the public welfare.

103. While the majority of multilateral chemicals agreements include CBI provisions, they generally do not clearly define what information should or should not be considered confidential. However, both the OECD and the ILO have adopted recommendations that provide insight. It has been stated that these instruments preclude confidentiality on products in the area of health and safety.⁹¹

104. In 1983, the OECD recommended a list of types of information that are relevant to chemicals management and that should be deemed “non-confidential,” meaning no restrictions should be placed on exchange of the information between governments nor on its disclosure to the public. The recommendation also noted that in some circumstances, it may be appropriate to release other information, in addition to the listed types. The “non-confidential” list includes:

⁹⁰ See generally, OECD, Chemical Group and Management Committee, *Series on Pesticides Number 6*, available at <http://www.oecd.org/olis/1998doc.nsf/LinkTo/env-mc-chem%2898%2920>; United States Env't Protection Agency, *Pesticides: Freedom of Information Act*, available at <http://www.epa.gov/pesticides/foia/glossary.htm>.

⁹¹ *Report of the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for the Application of the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade on the Work of Its First Session*, para. 50, UNEP/FAO/PIC/INC.1/10 (1996).

- trade name or name commonly used;
- general data on uses;
- safe handling precautions to be observed in the manufacture, storage, transport and use of the chemical;
- recommended methods for disposal and elimination;
- safety measures in case of an accident;
- physical and chemical data with the exception of data revealing the chemical's identity; and
- summaries of health, safety, and environmental data including precise figures and interpretations.⁹²

105. The ILO Code of Practice for Safety in the Use of Chemicals at Work recommends that government authorities protect CBI by making special provisions that:

- (a) limit the disclosure of confidential information to those who have a need related to workers' safety and health;
- (b) ensure that those who obtain confidential information agree to use it only to address safety and health needs, and otherwise to protect its confidentiality;
- (c) provide that relevant confidential information be disclosed immediately in an emergency; and
- (d) provide for procedures to consider promptly the validity of the confidentiality claim and of the need for the information withheld where there is a disagreement regarding disclosure.⁹³

3.2 Origin and Application

106. Agenda 21 recognized the need to balance the right to know the identity of hazardous ingredients with industry's right to protect confidential business information.⁹⁴ As noted above, many of the multilateral chemicals agreements contain CBI provisions. Under the Stockholm Convention, information on health and safety of humans and the environment cannot be regarded as confidential. Parties that exchange other information pursuant to the Convention must protect its confidentially as mutually agreed.⁹⁵

107. For its prior informed consent procedure, the Rotterdam Convention also requires parties that exchange information to protect its confidentiality "as mutually agreed." Furthermore, the Convention lists several types of information that may not be considered confidential, such as safety data sheet information, expiration and production dates, information on precautionary

⁹² OECD, *Recommendation of the Council Concerning the OECD List of Non-Confidential Data on Chemicals*, C(83)98/Final (1983).

⁹³ International Labour Organization, *Code of Practice for Safety in the Use of Chemicals at Work*, art. 2.6.1 (1993).

⁹⁴ Agenda 21, chapter 19.8.

⁹⁵ Stockholm Convention, art. 9.5.

measures, summary results of toxicity tests, and information submitted to satisfy the Convention's listing criteria for adding restricted and banned chemicals.⁹⁶

3.3 Relevance to the SAICM

108. Many businesses in the chemicals industry have a legitimate need to prevent certain kinds of proprietary information from being divulged to their competitors. A thoughtful approach to CBI that recognizes those needs without compromising the ability of governments and the public to safeguard human health and the environment is necessary to achieve the sound management of chemicals within a sustainable development framework. Participating governments in the SAICM, in consultation with other stakeholders, will need to consider how transparency and free exchange of information may be balanced with confidentiality restrictions. They may wish to foster greater coherency and consistency among all aspects of chemicals management at the international level, while taking into account the rules of confidentiality at the national level, which often determine how the international rules and guidelines actually operate.

3.4 Inclusion in the Overarching Policy Strategy

109. Chapter 19, paragraph 8 of Agenda 21 discusses confidential business information as a balancing consideration within the context of right to know. Following that approach, this study recommends that confidential business information should be included in the OPS as part of the right to know, rather than listed separately (see Section 2.4 above).

3.5 Relevant Concrete Measures

110. Because of their potential to restrict the right to know, confidential business information concepts are relevant to all of the concrete measures that are applicable to the right to know. To the extent that CBI must be used to restrict the right to know, it should be carefully and narrowly tailored so that it does not interfere with achievement of chemical safety goals. This may be accomplished by (1) adding under Objective 2's concrete measure "Stakeholder participation" the activity, "Ensure full, timely access to all information regarding chemicals management that relates to health and safety of humans and the environment"; and (2) adding under Objective 3's concrete measure "Promote industry participation and responsibility" the activity, "Promote corporate responsibility through the provision of full, timely access to all information regarding chemicals management that relates to health and safety of humans and the environment."

4. Good Governance

4.1 Description and Main Elements

111. The concept of good governance reflects a growing awareness of the importance of transparent, accountable, and honest government to sustainable development, as well as an increasing understanding of the corrosive effect of corruption on public morale, economic efficiency, political stability, and sustainable development in general. Good governance implies, among other things, that States and international organizations should: (a) adopt democratic and transparent decision-making procedures and financial accountability; (b) respect due process in

⁹⁶ Rotterdam Convention, art. 14.2-3.

their procedures and observe the rule of law; (c) protect human rights; and (d) conduct public functions such as implementation of laws and regulations, public procurement, and customs in a transparent, non-corrupt manner.

112. Good governance implies not only that civil society has a right to fair treatment by States and intergovernmental organizations, but also that non-state actors, including business enterprises and NGOs, should be subject to appropriate internal democratic governance, accurate financial reporting, and effective accountability. In addition, good governance calls for corporate social responsibility and socially responsible investments as conditions for the existence of a sustainable global market.

4.2 Origin and Application

113. Good governance is an increasingly important element in international instruments. The United Nations Millennium Declaration and the Millennium Development Goals contain language about good governance.⁹⁷ Paragraph 4 of the WSSD Plan of Implementation states,

Good governance within each country and at the international level is essential for sustainable development. At the domestic level, sound environmental, social and economic policies, democratic institutions responsive to the needs of the people, the rule of law, anti-corruption measures, gender equality and an enabling environment for investment are the basis for sustainable development.

114. Recent years have also witnessed a spate of treaties dealing with corruption, including treaties negotiated under the auspices of the United Nations, OECD, Council of Europe (CoE), the Organization of American States (OAS), and other regional and subregional organizations.⁹⁸

115. While the global chemicals treaties do not contain explicit mention of good governance, some contain provisions about illegal trafficking, which can be most problematic in countries with weaker governance capacity. For example, the Basel Convention contains detailed provisions regarding illegal transboundary trafficking in hazardous wastes, including requirements that each party must take appropriate legal, administrative, and other measures to prevent and punish illegal trafficking.⁹⁹ The Rotterdam Convention notes the pertinent provisions of Agenda 21 regarding the prevention of illegal international traffic in toxic and dangerous products, and it recognizes the importance of the standards in the International Code of Conduct and the UNEP Code of Ethics on the International Trade in Chemicals.¹⁰⁰ Moreover, in their calls for transparency and participatory chemicals management processes, the chemicals treaties implicitly rely on good governance practices among their parties.

⁹⁷ United Nations Millennium Declaration, paras. 13, 24; Millennium Development Goals, target 12.

⁹⁸ See, e.g., UNITED NATIONS CONVENTION AGAINST CORRUPTION (2003, not yet entered into force); OECD, CONVENTION ON COMBATING BRIBERY OF FOREIGN PUBLIC OFFICIALS IN INTERNATIONAL BUSINESS TRANSACTIONS (1998); COUNCIL OF EUROPE: CRIMINAL LAW CONVENTION ON CORRUPTION, ETS no. 173 (1999); CIVIL LAW CONVENTION ON CORRUPTION, ETS no. 174 (1999); Council of Europe, Committee of Ministers, Resolution (98) 7, Authorising the Partial and Enlarged Agreement Establishing the “Group of States Against Corruption – Greco” (1998); ORGANIZATION OF AMERICAN STATES, INTER-AMERICAN CONVENTION AGAINST CORRUPTION (1996).

⁹⁹ Basel Convention, art. 4.4.

¹⁰⁰ Rotterdam Convention, preamble.

4.3 Relevance to the SAICM

116. Illegal international trafficking in dangerous chemicals and wastes remains a serious problem for many countries, especially developing countries and countries with economies in transition. Stopping this traffic is of critical concern and should thus be an important component of the SAICM. At a minimum, halting illegal traffic will require efficient and honest customs officials, prosecutors, and judges to interdict contraband chemicals and bring smugglers and their accomplices to justice. Similarly, adequate management of chemicals at both the international and domestic levels requires comprehensive, rigorous, and credible regulation. In order to accomplish this, regulatory decisions about chemicals must be made on their merits, free from corruption. These issues are central to good governance.

4.4 Inclusion in the Overarching Policy Strategy

117. Good governance might be included among a list of principles and approaches in the OPS using the following language:

Good governance, as set out in Paragraph 13 of the United Nations Millennium Declaration and Paragraph 4 of the World Summit on Sustainable Development Plan of Implementation, including sound environmental, social, and economic policies; democratic and accountable institutions that are responsive to the needs of the people; the rule of law; anti-corruption measures; gender equality; and an enabling environment for investment; and noting that good governance is essential for sustainable development and, more particularly, for the prevention and punishment of illegal traffic in hazardous wastes and restricted and banned chemicals.

4.5 Relevant Concrete Measures

118. Good governance provides the foundation for governments and stakeholders to implement effectively and sustainably all of the concrete measures listed under Objectives 1-5. Additionally, the following activity should be added to Objective 3's concrete measure, "Legal, policy and institutional aspects" and/or to Objective 5, "Prevention of illegal traffic in toxic and dangerous goods": "Promote good governance practices by states, including through the ratification and full implementation of relevant international instruments dealing with corruption, to expedite the prevention and punishment of illegal traffic in hazardous wastes and restricted and banned chemicals."

D. Cooperation and Accountability

1. Cooperation among States, Including Common but Differentiated Responsibilities

1.1 Description and Main Elements

119. The duty to cooperate is a long-recognized principle of international law. Traditionally relating to the duty of States, it is general in nature and applies at the bilateral, regional, and

global levels. Specific agreements, however, can be viewed as elaborating the duty to cooperate with respect to the topics to which they apply.¹⁰¹

120. In modern international environmental law, the duty to cooperate is linked to the concept of “common but differentiated responsibilities” (CBDR).¹⁰² The rationale of CBDR stems from (1) the different contributions States may have made to creating the environmental problem in question and (2) the different technical and financial abilities States may have available to deal with the problem and to assist other countries in dealing with it. Taking account of CBDR thus involves addressing whether the relevant substantive norms of an agreement should vary according to whether a party is a developed country or not, and whether developed countries have a special obligation with respect to providing technical and financial assistance to developing countries and countries with economies in transition. In practical terms, the concept of CBDR translates into the recognition that different standards, delayed compliance timetables, or less stringent commitments may be appropriate for different countries, to encourage universal participation, effectiveness, and equity.

1.2 Origin and Application

121. At UNCED, the duty to cooperate was linked in Principle 7 of the Rio Declaration with the “common but differentiated responsibilities” concept:

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. In view of the different contributions to global environmental degradation, states have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

122. Many chemicals-related treaties take CBDR into account or structure their obligations on the basis of it. For example, the Montreal Ozone Protocol gave developing countries that annually consume 0.3 tonnes or less per capita of ozone depleting substances extended timeframes for complying with the Protocol’s phase-out requirements.¹⁰³ Similarly, after citing Rio Principle 7 in its preamble, the Stockholm POPs Convention establishes specific, time-bound exemptions to its elimination requirements for several listed chemicals, and it allows continued use of DDT for disease vector control, so long as viable alternatives are not available.¹⁰⁴ While the Stockholm Convention does not explicitly state that these exemptions are available only to accommodate developing countries, they were included in the Convention with the understanding that developing countries would need the delayed compliance period that the exemptions make possible.

¹⁰¹ Commentators have argued that a modern conception of state sovereignty—describing the sum of all rights and obligations that the international system has allocated to a state—includes the duty to cooperate. *See, e.g.*, FRANZ XAVER PERREZ, COOPERATIVE SOVEREIGNTY: FROM INDEPENDENCE TO INTERDEPENDENCE IN THE STRUCTURE OF INTERNATIONAL ENVIRONMENTAL LAW 5-6 (The Hague: Kluwer Law Int’l. 2000).

¹⁰² *Id.* at 294.

¹⁰³ Montreal Protocol, art. 5.

¹⁰⁴ *See* Stockholm Convention, annexes A and B, part II.

123. The CBDR concept is a driving force behind the prior informed consent procedures of the Basel and Rotterdam Conventions. Both of these Conventions were developed and adopted significantly in recognition that developing and economies in transition countries are especially vulnerable to illegal trafficking and otherwise unauthorized shipment of hazardous wastes and pesticides. The two Conventions' consent requirements are intended in part to enhance the ability of these countries to protect themselves from such shipments, and thereby to contribute to global welfare through the sound management of hazardous pesticides and wastes.

124. A number of international chemicals-related agreements recognize a duty on the part of industrialized countries to assist developing countries in protecting the global environment. Such assistance may entail financial aid, transfer of environmentally sound technology, and cooperation through international organizations. In some of the agreements, e.g., the Basel and Rotterdam Conventions, the provision of technical and financial resources is recommended, but not mandatory. Others, such as the Stockholm Convention, the Montreal Protocol, and the Framework Convention on Climate Change, contain mandatory provisions for new and additional funding to assist developing countries in meeting the incremental costs of their implementation of treaty requirements.

1.3 Relevance to the SAICM

125. Because of the global dimensions and the severity of environmental and health problems stemming from chemicals, the cooperation of all countries is essential to achieve the WSSD 2020 goal. This will only occur if the norms, institutions, and mechanisms involved are capable of being effective and efficient and are viewed as being equitable. The elements of cooperation and CBDR will be an inevitable part of the considerations of how to achieve that outcome.

1.4 Inclusion in the Overarching Policy Strategy

126. Cooperation, including common but differentiated responsibilities, might be included among a list of principles and approaches in the OPS using the following language:

Cooperation among States, as set out in Principle 7 of the Rio Declaration on Environment and Development and as further elaborated and defined in Paragraphs 2 and 23 of the Plan of Implementation of the World Summit on Sustainable Development and in other multilateral agreements and conventions, including common but differentiated responsibilities of states in view of their different contributions to global environmental degradation and the different financial resources they command.

1.5 Relevant Concrete Measures

127. The CBDR element of cooperation is especially relevant to those concrete measures dealing with capacity building and technical cooperation under Objective 4, and is implicitly recognized by the language contained in several of the listed activities regarding developing and economy in transition countries.

2. Partnerships

2.1 Description and Main Elements

128. Public-private partnerships are collaborations among stakeholders such as governments, IGOs, industry groups, business, and NGOs. They allow each partner to leverage its “unique set of expertise, efficiencies and networks to achieve a more productive and sustainable outcome than if pursued alone.”¹⁰⁵ Partnerships are important for “implementing multilateral environmental agreements, raising awareness of issues relating to chemicals and hazardous waste, and encouraging the collection and use of additional scientific data.”¹⁰⁶

129. Although each partnership arrangement is unique to the participants and goals involved, many successful partnerships share certain attributes. Beginning with a clear goal is important so that all partners are working towards the same ends. Each partner should participate in goal development and in making decisions for how the goal is reached. For public-private partnerships it is also crucial that the public interest be protected. Many partnerships have an objective method of measuring progress against the desired goal to ensure that not only is the goal achieved, but the public interest is not compromised along the way.

2.2 Origin and Application

130. The idea that States and other stakeholders should “cooperate in a spirit of global partnership” is thoroughly embodied in the 1992 Rio Declaration.¹⁰⁷ Of its twenty-seven principles, nearly one-third specifically reference cooperation among States or between States and private groups to reach the goal of sustainable development. Agenda 21 elaborates on this theme by recommending greatly expanded roles for non-governmental organizations as “partners for sustainable development,” as well as strengthened partnerships with business and industry.¹⁰⁸ Ten years after Rio, the IFCS declared in Bahia, Brazil that “cooperation and partnership are essential to the development of appropriate policies and infrastructure for chemicals management in all countries.”¹⁰⁹

131. At its most recent meeting, the UNEP Governing Council reiterated the value of developing partnerships in chemicals management among all shareholders, based on the WSSD, the Rio Declaration, Agenda 21, and the “potential for further enhancing coherence and synergies between the Montreal Protocol, the Basel Convention, the Rotterdam Convention, the Stockholm Convention and the Chemicals Branch of the UNEP.”¹¹⁰ Similarly, in its mercury decision, the Governing Council urged governments, intergovernmental and non-governmental organizations, and the private sector to develop and implement partnerships as one approach to

¹⁰⁵ Elizabeth Sobel, *10 Things You Need to Know About Public-Private Partnerships*, EUBUSINESS (2003), available at <http://www.eubusiness.com/topics/CSR/EUNews.2003-10-01.4252>.

¹⁰⁶ WSSD Plan of Implementation, para. 23(d).

¹⁰⁷ Rio Declaration, Principle 7.

¹⁰⁸ Agenda 21, chapters 27, 30.7.

¹⁰⁹ Bahia Declaration, declaration I.

¹¹⁰ Committee of Permanent Representatives to the United Nations Environment Programme, Decisions Adopted by the Twenty-Third Session of the Governing Council/Global Ministerial Environment Forum (Advance Text), Decision 23/9 (March 2005).

reducing the risks to human health and the environment from the release of mercury and its compounds.¹¹¹

132. Among specific chemicals-related multilateral agreements, the Basel Convention initiated in 2003 a “sustainable partnership on the environmentally sound management of end-of-life mobile telephones” and established an expert group to work on the problem.¹¹² Additionally, parties have created a Basel Convention Partnership Programme to coordinate collaborative efforts among industry, environmental NGOs, and business.¹¹³ The Plan sets out the general principles that should apply to Basel partnerships and states that “[t]he effective involvement and coordination by all concerned stakeholders is seen as essential for achieving the aims of the Basel Declaration.”¹¹⁴

2.3 Relevance to the SAICM

133. Public-private partnerships can tap the vast knowledge, technical expertise, and human and related resources of the non-governmental sector to further the aims of international chemicals management and the pursuit of sustainable development. Along with partnerships and enhanced coordination among States and IGOs, public-private partnerships are an important part of the integrated chemicals management approach. While these partnerships cannot substitute for the legally binding structure of multilateral environmental agreements in dealing with global environmental issues of concern, they can provide a valuable complement to the MEAs, and thus are a useful approach for incorporation into the SAICM.

2.4 Inclusion in the Overarching Policy Strategy

134. Partnerships might be included among a list of principles and approaches in the OPS using the following language:

Public, private, and public-private partnerships, as recommended in the Rio Declaration on Environment and Development, Agenda 21, the Bahia Declaration on Chemical Safety, and the Plan of Implementation of the World Summit on Sustainable Development, including expanded roles for non-governmental organizations and the private sector as partners for sustainable development.

2.5 Relevant Concrete Measures

135. Partnership approaches may supplement or enhance the efforts of governments to implement nearly all of the concrete measures listed under Objectives 1-5. Their potential should be specifically mentioned as an additional activity under Objective 4’s “Capacity building to support national actions”: “In addition to multilateral and intergovernmental assistance, promote partnerships to increase the integrated chemicals management capacity of developing countries and countries with economies in transition.”

¹¹¹ *Id.* para 27.

¹¹² Basel Convention, *Sustainable Partnership for the Environmentally Sound Management of End-of-Life Mobile Telephone*, Decision VI/31, UNEP/CHW.6/40 (2003).

¹¹³ Basel Convention, *Basel Convention Partnership Programme*, Decision VII/3, Basel Convention COP 7 Report, UNEP/CHW.7/33 (2005).

¹¹⁴ *Id.* annex to decision VII/3 on the Basel Convention Partnership Programme.

3. Liability

3.1 Definition and Elements

136. Liability is the condition of a public or private entity being responsible for a possible or actual loss. In chemicals management, liability may refer to responsibility for damages caused by an activity related to any stage in the life cycle of a chemical or chemicals. Liability focuses on providing compensation for an injury after it has occurred. However, when liability mechanisms are clearly defined and readily accessible by injured parties, and when liability awards are enforceable and can provide compensation that exceeds the value of the activity that led to the damage, then liability can induce entities to internalize the costs of risks associated with their activities and seek alternative chemicals and processes that lessen the likelihood of liability claims. Thus, well-structured liability mechanisms can play an important deterrent, or preventive, role in chemicals management.

137. The issue of liability is exceedingly complex; hence, this section deals with it only at the most introductory level. *Private operator liability* (civil liability) attaches to private entities for harm caused by their activities or products. *State liability* may attach to national governments for their own actions or, in some cases, for the actions of their citizens or local governments. *Fault-based liability* means an entity is responsible for harms that occurred because the entity did something wrong, such as failing to follow accepted industry standards or failing to observe an applicable environmental regulation. *Strict liability* means an entity is responsible for any harms caused by its activity regardless of fault, unless the entity can prove that the harm was caused by certain specific reasons that were beyond the entity's control, such as war or an unforeseeable natural phenomenon. Strict liability is often paired with *limited liability*, which sets a cap on the amount of damages that may be paid to a particular claimant or in relationship to a particular event.

138. At the international level, liability mechanisms may be grouped in three categories:¹¹⁵

- (1) International legal instruments that impose civil liability on private entities to compensate for harms they cause to human health or the environment.
- (2) Treaties establishing State liability for certain activities. State liability treaties have rarely been developed and have been applied even less frequently.
- (3) Claims under customary international law (i.e., non-treaty law observed and practiced by States) for transboundary harm to a State caused by activities in another State. Historically, there have been very few such claims among States.

139. The second and third liability categories refer to the consequences of a State violating its legal obligations, applying the principles of State responsibility. Because most chemicals activities leading to transboundary environmental risks and harm are carried out by private operators, and because State responsibility for dealing with environmental harms has not (with limited exceptions) been utilized by States, this section focuses on the first category, international civil liability.

¹¹⁵ See Hunter et al., *International Environmental Law & Policy* at 483.

3.2 Origin and Application

140. In both the 1972 Stockholm Declaration on the Human Environment and the 1992 Rio Declaration, governments committed themselves to cooperate to develop further international law regarding liability and compensation for the victims of pollution and other environmental damage.¹¹⁶ A number of international liability regimes have been developed, though many of them have never entered into force. Among the most prominent are (1) nuclear power liability treaties, which generally impose strict, but limited, liability on nuclear operators; by establishing liability limits, these agreements made nuclear power insurable and thus economically feasible;¹¹⁷ and (2) the liability regimes for oil pollution under the International Maritime Organization. The IMO instruments impose strict but limited liability for ship owners, and set up an additional compensation fund financed by a levy on oil importers.¹¹⁸

141. Among the chemicals MEAs, the 1999 Liability and Compensation Protocol to the Basel Convention creates a civil liability regime that applies to each phase of the transboundary movement of hazardous wastes, from their generation to their export, international transit, import, and final disposal.¹¹⁹ With limited exceptions, the Protocol establishes strict liability for generators, exporters, and/or importers; financial limits for liability are determined by applicable domestic law.¹²⁰ In cases where harm is due to fault, financial liability is unlimited.¹²¹ If compensation under the Protocol does not cover the costs of damage, the Basel Convention's voluntary Technical Cooperation Trust Fund may be used to assist in compensation.¹²² The Protocol has received only five ratifications (out of 20 needed for entry into force) despite having been adopted nearly six years ago, possibly because of its complexity and other perceived shortcomings.¹²³

142. Neither the Rotterdam nor Stockholm Conventions contain liability provisions. In the case of the Stockholm Convention, a three-day informational workshop on liability was held in 2002; however, the issue did not receive significant attention at the Convention's first Conference of the Parties in May 2005.

3.3 Relevance to the SAICM

143. It has been suggested that international civil liability regimes have been successful when they have focused on narrowly defined hazardous activities, have addressed the interests of

¹¹⁶ STOCKHOLM DECLARATION OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT (Stockholm Declaration), Principle 22, U.N. Doc. A/CONF.48/14 (1972); Rio Declaration, Principle 13.

¹¹⁷ See, e.g., OECD CONVENTION ON THIRD PARTY LIABILITY IN THE FIELD OF NUCLEAR Energy (1960); CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE (1963).

¹¹⁸ See, e.g., INTERNATIONAL MARITIME ORGANIZATION (IMO), INTERNATIONAL CONVENTION ON CIVIL LIABILITY FOR OIL POLLUTION DAMAGE (1969); IMO, INTERNATIONAL CONVENTION ON THE ESTABLISHMENT OF AN INTERNATIONAL FUND FOR COMPENSATION FOR OIL POLLUTION DAMAGE (1971).

¹¹⁹ BASEL CONVENTION PROTOCOL ON LIABILITY AND COMPENSATION FOR DAMAGE RESULTING FROM TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL, UNEP/CHW.5/22 (1999) (not yet entered into force).

¹²⁰ *Id.* arts. 3, 4, 12, and annex B.

¹²¹ *Id.* art. 5.

¹²² *Id.* art. 15.

¹²³ Secretariat of the Basel Convention, "Ratifications," <http://www.basel.int/ratif/frsetmain.php> (last viewed 2 June 2005).

victims, and have facilitated the continuation of a valued, legal activity.¹²⁴ Where private operators and hazard-causing activities are numerous and diffuse, or where the objective has been to establish State responsibility, international liability instruments have tended either to be impossible to negotiate or they have never entered into force. The UN International Law Commission, which recently adopted eight draft liability principles after considering the topic for nearly 27 years,¹²⁵ concluded that liability regimes should focus “on allocation of loss among different actors involved in the conduct of hazardous activities, while stressing the obligation of the State to ensure payment of prompt and adequate compensation to victims of transboundary harm.”¹²⁶

144. To the extent that liability considerations related to the sound management of chemicals may fit within the above parameters, well-crafted, realistic liability mechanisms could provide a promising means of implementing the polluter pays principle and facilitating just compensation for victims of chemicals damage. However, where the private operators of chemicals-related activities are numerous and diffuse, and where state capacity does not exist to provide ready access to liability mechanisms or a means to enforce them, then stakeholders may wish to consider whether pursuing international liability instruments is the most effective way to allocate resources towards a strategic approach to international chemicals management.

3.4 Inclusion in the Overarching Policy Strategy

145. Liability might be included among a list of principles and approaches in the OPS using the following language:

Liability and compensation instruments, as recommended in Principle 22 of the Stockholm Declaration on the Human Environment and Principles 13 and 16 of the Rio Declaration on Environment and Development, and taking note of the UN International Law Commission’s work on the allocation of loss in the case of transboundary harm arising out of hazardous activities.

3.5 Relevant Concrete Measures

146. Liability and compensation is included as a discrete concrete measure under Objective 3 (governance). To promote the development of international liability approaches that could further the aims of the SAICM, the following activity could be added to that concrete measure: “Promote consideration by the United Nations General Assembly of the Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities, as adopted in 2004 by the UN International Law Commission.”

¹²⁴ Anne Daniel, *Civil Liability Regimes as a Complement to Multilateral Environmental Agreements: Sound International Policy or False Comfort?*, 12 RECIEL 225, 231, 246 (2003).

¹²⁵ International Law Commission, “Text of draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities adopted by the Commission on first reading,” in *Report of the International Law Commission – 55th Session*, at 153, UN Doc. A/59/10 (2004).

¹²⁶ P.S. Rao, Special Rapporteur, *International Liability for Transboundary Harm*, 34 ENVTL. POL’Y & L. 224-231 (2004).

III. Conclusions and Recommendations

147. This study has been presented with a view toward furthering understanding and agreement among SAICM participants on relevant principles and approaches of sustainable development and chemicals management that might be incorporated into the SAICM. Agreement among SAICM participants on principles and approaches can establish common ground for development and implementation of the SAICM by indicating its essential characteristics; providing guidance in interpreting the meaning of its constituent parts; and helping governments, IGOs, NGOs, commercial enterprises, and other stakeholders to fill in gaps as they attempt to realize SAICM objectives.

148. To that end, the study has identified 15 principles and approaches that the authors believe have the most direct relevance to the SAICM. Most of these principles and approaches were also suggested by SAICM participants at the first and second PrepComs. For each principle and approach, the study has provided its description and main elements, its origin and application in selected chemicals and wastes instruments and policies, and its possible relevance to the SAICM. The study has also suggested how each principle or approach might be addressed under the SAICM Overarching Policy Strategy (OPS), and it identified concrete measures to which the principle or approach may be relevant.

149. Due in part to the integrated nature of the principles and approaches and their broad applicability to chemicals management and sustainable development, the study suggests that most of the principles and approaches are relevant to most of the concrete measures that have so far been identified. However, in some cases, the study proposes that the concrete measures should contain additional, specific references to certain principles and approaches. In addition to being included in the body of the study, these proposed additional concrete measures are summarized in Annex 2, which presents them in the tabular format of the SAICM concrete measures document (Annex V of the PrepCom2 meeting report).

150. Regarding the OPS, the study concludes that two of the identified principles or approaches (life cycle approach and confidential business information) do not need to be listed separately in Part V (the Principles and Approaches section of the OPS), because they are components of other principles or approaches that should be separately listed. Thus, the study proposes that SAICM participants may wish to consider listing 13 principles and approaches in the OPS. In conformity to requests by participants at PreCom2, the study proposes specific and precise textual language for each of these principles and approaches. Each of these principles and approaches has been previously included and endorsed in the Rio Declaration, Agenda 21, the United Nations Millennium Declaration, and/or the WSSD Plan of Implementation. Accordingly, the proposed text for each principle or approach references one or more of these foundational instruments, and generally uses language that is either based on, or comes directly from, those instruments. A composite document of all 13 of the principals and approaches proposed for Part V of the OPS may be found in Annex 1 to this study.

151. Additionally, in their comments on the first draft of this study, the European Union and Croatia and Slovenia suggested the inclusion of two additional principles and approaches. These suggestions are included at the end of Annex 1.

Annex 1

Proposed Text for the SAICM Overarching Policy Strategy, Part V (Principles and Approaches)

V. Principles and approaches

In developing and implementing a strategic approach to international chemicals management, including concrete measures, governments and other stakeholders shall be guided by the following principles and approaches:

1. *Integrated chemicals management*, based upon the coordinated and integrated approaches for sound management of chemicals and wastes recommended in Chapters 19 and 20 of Agenda 21 and paragraphs 2 and 22 of the Plan of Implementation of the World Summit on Sustainable Development, and including: a life cycle approach that considers the development, production, formulation and processing, transport, distribution, use, and disposal of chemicals and chemicals in products from a holistic, life cycle perspective; stakeholder involvement of all parties who have an interest in, or might be affected by, chemicals management; coordination across and between governments, as well as intergovernmental organizations and institutions; and taking advantage of synergies that make the best use of available resources and that avoid unnecessary duplication of effort.
2. *Inter-generational equity*, as set out in the pertinent provisions of the Rio Declaration on Environment and Development, including Principle 3, and Chapter 19 of Agenda 21, noting that chemical contamination may cause grave damage to human health, genetic structures and reproductive outcomes, and governments and stakeholders should thus take particular account of the impacts that their decisions and actions in respect to chemicals management may have upon future generations.
3. *Precaution*, as set out in Principle 15 of the Rio Declaration on Environment and Development and as further elaborated and defined in multilateral chemicals and wastes conventions and agreements, which have broadened the scope of precaution to include human health and have provided additional guidance for its use in decision making.
4. *Proportionality*, meaning that measures taken to protect human health and the environment should be proportional to the chosen level of protection, taking into account technical and economic feasibility and other relevant factors; reaffirming that it is the sovereign right of States, subject to applicable standards established by international legal instruments, to choose their own levels of protection for human health and the environment.
5. *Prevention*, as set out in Chapters 6, 19, and 20 of Agenda 21 and reaffirmed in the Plan of Implementation of the World Summit on Sustainable Development, to minimize risks to human health and the environment from pesticides, other chemicals, and

hazardous wastes by developing and enhancing distribution controls, assessment of risks, information exchange, institutional management capabilities, cleaner production, and the prevention of illegal trafficking, with a view to preventing harm from occurring rather than dealing with it only after it has occurred.

6. *Substitution*, as set out in Chapters 19 and 20 of Agenda 21, to strengthen research on safe and safer alternatives to toxic chemicals and to reduce risk by using other chemicals and non-chemical technologies, to require or provide incentives for cleaner production methods and alternatives for processes and substances that result in the generation of hazardous wastes, and to prohibit specific uses of substances or processes for which less hazardous substances or processes are available.

7. The *internalization of costs* (polluter pays), as set out in Agenda 21, Principle 16 of the Rio Declaration on Environment and Development, and Paragraph 15(b) of the Plan of Implementation of the World Summit on Sustainable Development, by using economic and other appropriate instruments to ensure that prices reflect the full social and environmental costs of chemicals and chemicals-related products, and that producers and consumers incorporate those costs into their decisions rather than pass the costs on to other parts of society, other countries, or to future generations.

8. *Public participation*, including equal access and participation by women, as set out in Principle 10 of the Rio Declaration on Environment and Development and in the Plan of Implementation of the World Summit on Sustainable Development, providing for public access to information concerning the environment that is held by public authorities, the opportunity to participate in decision-making processes, and effective access to judicial and administrative proceedings, including redress and remedy.

9. The *right to know*, as set out in Principle 10 of the Rio Declaration on Environment and Development, providing that every individual should have access to information on hazardous materials and activities in their communities, and in Chapter 19 of Agenda 21, providing that the right of communities and workers to know the risks of chemicals is a prerequisite for achieving chemical safety, while acknowledging that the right to know the identity of hazardous ingredients is balanced with industry's right to protect confidential business information; provided that, for purposes of the SAICM, information on health and safety of humans and the environment may not be regarded as confidential.

10. *Good governance*, as set out in Paragraph 13 of the United Nations Millennium Declaration and Paragraph 4 of the World Summit on Sustainable Development Plan of Implementation, including sound environmental, social and economic policies; democratic and accountable institutions that are responsive to the needs of the people; the rule of law; anti-corruption measures; gender equality; and an enabling environment for investment; and noting that good governance is essential for sustainable development and, more particularly, for the prevention and punishment of illegal traffic in hazardous wastes and restricted and banned chemicals.

11. *Cooperation among States*, as set out in Principle 7 of the Rio Declaration on Environment and Development and as further elaborated and defined in Paragraphs 2 and

23 of the Plan of Implementation of the World Summit on Sustainable Development and in other multilateral agreements and conventions, including common but differentiated responsibilities of states in view of their different contributions to global environmental degradation and the different financial resources they command.

12. *Public, private, and public-private partnerships*, as recommended in the Rio Declaration on Environment and Development, Agenda 21, the Bahia Declaration on Chemical Safety, and the Plan of Implementation of the World Summit on Sustainable Development, including expanded roles for non-governmental organizations and the private sector as partners for sustainable development.

13. *Liability and compensation* instruments, as recommended in Principle 22 of the Stockholm Declaration on the Human Environment and Principles 13 and 16 of the Rio Declaration on Environment and Development, and taking note of the UN International Law Commission's work on the allocation of loss in the case of transboundary harm arising out of hazardous activities.

Additional suggestion from Croatia and Slovenia:

Human right to non-toxic environment, where under “environment” the different environments concerning human life and activities (e.g. working environment, household environment, natural environment, etc.) should be understood.

Additional suggestion from the European Union:

The sound management of chemicals poses a significant challenge to us all. One way to improve the prospect of addressing that challenge is to use an approach that draws on the experience of several countries in protecting human health and the environment and shares the burden of work across many, giving better results and delivering resource savings by doing once what would otherwise have to be done many times.

Annex 2

Proposed Text for Additional Concrete Measures

Note: brackets indicate the principle or approach that is reflected in the proposed concrete measure/activity

Concrete measures addressing risk reduction (objective 1)

Concrete measures	Activities	Main actors	Targets/Timeframes
Children and chemical safety	<ul style="list-style-type: none"> Establish needed infrastructure for research into the impact of exposure to chemicals on children, women, and future generations. [inter-generational equity] Enact and strengthen applicable chemicals safety law so that it takes into account, in a precautionary manner, the special vulnerabilities of children and future generations to impacts from chemicals, including through the establishment of additional margins of safety. [precaution] 	<ul style="list-style-type: none"> IGOs National Governments Donor organizations Research and accredited training institutions 	<ul style="list-style-type: none"> Guidance tools by 2006 Funding and additional technical assistance by 2007-08 Implementation 2008-10
Life Cycle Approach	<ul style="list-style-type: none"> [insert activities presently listed under Objective 2, Life Cycle [life cycle approach] 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Risk assessment, management and communication	<ul style="list-style-type: none"> Promote the incorporation of hazard assessment and the analysis of safe and safer alternatives into risk management, product design, and permitting processes. [substitution] 	<ul style="list-style-type: none"> IGOs (e.g., WHO, FAO, UNEP, ILO, UNIDO, UNITAR) National Governments Industry Research institutions 	<ul style="list-style-type: none"> Support ongoing research and develop guidance tools beginning in 2006 Funding and additional technical assistance beginning 2007 Implementation beginning 2008-10
Highly toxic pesticides – risk management and reduction	<ul style="list-style-type: none"> Develop economic and other appropriate instruments that require producers of chemicals to internalize the full environmental and health costs of their products throughout their life cycles. [internalization of costs] 	<ul style="list-style-type: none"> Research institutions National Governments NGOs Industry Multilateral financial institutions IGOs, including OECD 	<ul style="list-style-type: none"> Commission and complete major study to identify options and evaluate feasibility by 2006 Develop guidance tools, including draft model laws by 2008 Implement internalization instruments in major chemicals-producing countries by 2012

Concrete measures addressing risk reduction (objective 1)

Concrete measures	Activities	Main actors	Targets/Timeframes
PBTs, CMRs, endocrine disruptors, vPvBs	<ul style="list-style-type: none"> Develop economic and other appropriate instruments that require producers of chemicals to internalize the full environmental and health costs of their products throughout their life cycles. [internalization of costs] 	<ul style="list-style-type: none"> Research institutions National Governments NGOs Industry Multilateral financial institutions IGOs, including OECD 	<ul style="list-style-type: none"> Commission and complete major study to identify options and evaluate feasibility by 2006 Develop guidance tools, including draft model laws by 2008 Implement in major chemicals-producing countries by 2012

Concrete measures addressing knowledge and information (objective 2)

Concrete measures	Activities	Main actors	Targets/Timeframes
Children and chemical safety	Incorporate, in a precautionary manner, considerations of the health and welfare of future generations into all concrete measures activities related to children and chemical safety. [inter-generational equity; precaution]	IGOs National Governments Donor organizations Research and accredited training institutions	Guidance tools by 2006 Funding and additional technical assistance by 2007-08 Implementation 2008-10
Risk assessment, management and communication	Promote the incorporation of hazard assessment and the analysis of safe and safer alternatives into risk management, product design, and permitting processes. [substitution]	IGOs (WHO, FAO, UNEP, ILO, UNIDO, UNITAR) National Governments Industry Research institutions	Support ongoing research and develop guidance tools beginning in 2006 Funding and additional technical assistance beginning 2007 Implementation beginning 2008-10
Stakeholder participation	Ensure full, timely access to all information regarding chemicals management that relates to health and safety of humans and the environment. [public participation/right to know]	National Governments Industry NGOs Trade unions IGOs (WHO, OECD, ILO)	Guidance tools based upon best practices by 2006 Funding and additional technical assistance beginning 2007 Implementation beginning 2008-10

Concrete measures addressing governance (objective 3)

Concrete measures	Activities	Main actors	Targets/Timeframes
Promote industry participation and responsibility	<ul style="list-style-type: none"> Promote corporate social responsibility for the safe production and use of all products, including through the development of economic and other appropriate instruments that require producers to internalize the full environmental and health costs of their products throughout their life cycles. [internalization of costs] 	<ul style="list-style-type: none"> Research institutions National Governments NGOs Industry Multilateral financial institutions IGOs, including OECD 	<ul style="list-style-type: none"> Commission and complete major study to identify options and evaluate feasibility by 2006 Develop guidance tools, including draft model laws by 2008 Implement in major chemicals-producing countries by 2012
Liability and compensation	<ul style="list-style-type: none"> Promote consideration by the United Nations General Assembly of the Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities, as adopted in 2004 by the UN International Law Commission. [liability] 	<ul style="list-style-type: none"> National governments UN General Assembly International Law Commission 	<ul style="list-style-type: none"> Involve chemicals policy experts in Government submission of comments on Draft Principles, which are due by 1 January 2006

Concrete measures addressing capacity-building and technical cooperation (objective 4)

Concrete measures	Activities	Main actors	Targets/Timeframes
Capacity building to support national actions	<ul style="list-style-type: none"> Explore the development of innovative ways to access private-sector finance and financial resources to support capacity building for national actions, including economic and other appropriate instruments that require producers to internalize the full environmental and health costs of their products throughout their life cycles. [internalization of costs] 	<ul style="list-style-type: none"> Research institutions National Governments NGOs Industry Multilateral financial institutions OECD 	<ul style="list-style-type: none"> Commission and complete major study to identify options and evaluate feasibility by 2006 Develop guidance tools, including draft model laws by 2008 Implement internalization instruments in major chemicals-producing countries by 2012
Capacity building to support national actions	<ul style="list-style-type: none"> In addition to multilateral and intergovernmental assistance, promote partnerships to increase the integrated chemicals management capacity of developing countries and countries with economies in transition. [partnerships] 	<ul style="list-style-type: none"> National Governments NGOs Industry Research institutions Trade unions 	<ul style="list-style-type: none"> Relevant actors initiate partnerships and develop and implement projects on an ongoing basis, beginning immediately

Concrete measures addressing illegal international traffic (objective 5)

Concrete measures	Activities	Main actors	Targets/Timeframes
Prevention of illegal traffic in toxic and dangerous goods	<ul style="list-style-type: none"> Promote good governance practices by states, including through the ratification and full implementation of relevant international instruments dealing with corruption, to expedite the prevention and punishment of illegal traffic in hazardous wastes and restricted and banned chemicals. [good governance] 	<ul style="list-style-type: none"> National Governments IGOs (including Rotterdam, Basel, Stockholm Convention Secretariats; OECD; UN Office on Drugs and Crime; UNEP, UNDP, etc.) Government/NGO partnerships (including IFCS, International Network for Environmental Compliance and Enforcement (INECE), etc.) Donor organizations 	<ul style="list-style-type: none"> Entry into force of UN Convention Against Corruption by 2005; most governments ratify by 2006-2007 Coordinated and integrated international approach for dealing with illegal traffic developed by 2007 Full funding and implementation of coordinated international approach by 2008

References

1996 PROTOCOL TO THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER (London Convention) (1996), <http://www.londonconvention.org/documents/lc72/1996%20PROTOCOL.doc>.

AARHUS CONVENTION ON ACCESS TO INFORMATION, PUBLIC PARTICIPATION IN DECISION-MAKING, AND ACCESS TO JUSTICE IN ENVIRONMENTAL MATTERS (1998), <http://www.unece.org/env/pp/documents/cep43e.pdf>.

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

Ashford, Nicholas A., *Implementing a Precautionary Approach in Decisions Affecting Health, Safety, and the Environment: Risk, Technology Alternatives, and Tradeoff-Analysis*, in THE ROLE OF PRECAUTION IN CHEMICALS POLICY (Elisabeth Freytag ed., Diplomatische Akademie Wien, 2002).

BAMAKO CONVENTION ON THE BAN OF THE IMPORT INTO AFRICA AND THE CONTROL OF TRANSBOUNDARY MOVEMENT AND MANAGEMENT OF HAZARDOUS WASTES WITHIN AFRICA (1991), http://www.ban.org/Library/bamako_treaty.html.

BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL (1989), www.basel.int/text/con-e.pdf.

BASEL CONVENTION PROTOCOL ON LIABILITY AND COMPENSATION FOR DAMAGE RESULTING FROM TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL, UNEP/CHW.5/22 (1999, not yet entered into force), <http://www.basel.int/meetings/cop/cop5/docs/prot-e.pdf> <http://www.iisd.ca/download/pdf/enb2006e.pdf>.

Basel Convention Secretariat, "Ratifications," <http://www.basel.int/ratif/frsetmain.php>.

Basel Convention, *Basel Convention Partnership Programme*, Decision VII/3, Basel Convention COP 7 Report, UNEP/CHW.7/33, (2005), <http://www.basel.int/meetings/cop/cop7/docs/33eRep.doc>.

Basel Convention, Decision III/1 Adopted by the Third Conference of the Parties, art. 4A (Basel Ban Amendment) (1995, not yet entered into force), http://www.ban.org/about_basel_ban/copsIII_1.html.

Basel Convention, *Mobilizing Resources for a Cleaner Future: Implementing the Basel Convention*, UNEP/CHW.7/INF/8 (2004), <http://www.basel.int/meetings/cop/cop7/docs/i08e.pdf>.

Basel Convention, *Sustainable Partnership for the Environmentally Sound Management of End-of-Life Mobile Telephone*, Decision VI/31, UNEP/CHW.6/40 (2003), <http://www.basel.int/meetings/cop/cop6/english/Report40e.doc>.

Bernson, Vibeke et al., Swedish Chemicals Inspectorate, *Swedish Legislation and Practise in Implementing the Substitution Principle*, 2004-12-20 rev 2 (2004).

Boje, David M., "Green Life Cycle and Accounting Praxis" *Green Life Cycle and Accounting Praxis* (Oct. 23, 1999), <http://web.nmsu.edu/~dboje/TDgreenlifecycle.html>.

Case Concerning the Gabčíkovo-Nagymaros Project (Hung. v. Slov.), 1997 ICJ REP. 92 (1997),
http://www.icjci.org/icjwww/idocket/ihs/ihsjudgement/ihs_ijudgment_970925_frame.htm.

Clary-Meuser Research Network, "Global Right-To-Know Resources,"
<http://www.mapcruzin.com/globalchem.htm>.

Commission of the European Community v. Kingdom of Denmark, Case C-246/99 (2001),
[http://curia.eu.int/jurisp/cgi-bin/gettext.pl?lang=en&num=79989086C19990246&doc=T&ouvert=T&seance=CONCL&where=\(\)](http://curia.eu.int/jurisp/cgi-bin/gettext.pl?lang=en&num=79989086C19990246&doc=T&ouvert=T&seance=CONCL&where=()).

Committee of Permanent Representatives to the United Nations Environment Programme, Decisions Adopted by the Twenty-Third Session of the Governing Council/Global Ministerial Environment Forum (Advance Text), Decision 23/9 (March 2005),
<http://www.unep.org/gc/gc23/documents/GC23Decisionsadvancetext-14Mar05.doc>.

CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE (1963),
<http://www.iaea.org/Publications/Documents/Infcircs/1996/inf500.shtml>.

COPENHAGEN DECLARATION ON SOCIAL DEVELOPMENT AND PROGRAMME OF ACTION OF THE WORLD SUMMIT FOR SOCIAL DEVELOPMENT, in *Report of the World Summit for Social Development*, U.N. WSSD, A/Conf.166/9 (1995),
<http://daccessdds.un.org/doc/UNDOC/GEN/N95/116/51/PDF/N9511651.pdf?OpenElement>.

Corrosion Proof Fittings v. EPA (U.S.), 947 F.2d 1201 (5th Cir. 1991).

Council of Europe, Committee of Ministers, Resolution (98) 7, Authorising the Partial and Enlarged Agreement Establishing the "Group of States Against Corruption – Greco" (1998),
<http://conventions.coe.int/Treaty/EN/PartialAgr/Html/Greco9807.htm>.

COUNCIL OF EUROPE: CIVIL LAW CONVENTION ON CORRUPTION, ETS no. 174 (1999),
<http://conventions.coe.int/treaty/en/Treaties/Html/174.htm>.

COUNCIL OF EUROPE: CRIMINAL LAW CONVENTION ON CORRUPTION, ETS no. 173 (1999),
<http://conventions.coe.int/Treaty/EN/Treaties/Html/173.htm>.

Daniel, Anne, *Civil Liability Regimes as a Complement to Multilateral Environmental Agreements: Sound International Policy or False Comfort?*, 12 RECIEL 225, 238 (2003).

European Chemical Industry Council (CEFIC), *Chemicals Management 2000+ Confidence in Chemicals: The View of the European Chemical Industry on the Future of European Chemicals Policy* (2000), http://www.cefic.be/position/Tad/pp_ta050.htm.

European Commission, *Communication from the Commission of 2 February 2000 on the Precautionary Principle*, <http://europa.eu.int/scadplus/leg/en/lvb/l32042.htm>.

FAO Council, *International Code of Conduct on the Distribution and Use of Pesticides* (2002),
http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/Pesticid/Code/PM_Code.htm.

Global Environment Facility, *Interim Report: Third Overall Performance Study of the Global Environment Facility* (Feb. 2005),
http://thegef.org/Whats_New/OPS3%20Interim%20Report%202-15_v2.pdf.

Gündling, Lothar, *The Status in International Law of the Principle of Precautionary Action*, 5 INT'L J. ESTUARINE & COASTAL L. 23 (1990).

HUNTER, DAVID ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND POLICY (2nd ed., 2002).

INTERGOVERNMENTAL FORUM ON CHEMICAL SAFETY (IFCS), BAHIA DECLARATION ON CHEMICAL SAFETY, IFCS/FORUM III/23w (2000),
<http://www.who.int/ifcs/documents/Forum/ForumIII/f3-finrepdoc/Bahia.pdf>.

International Labour Organization, *Code of Practice for Safety in the Use of Chemicals at Work* (1993),
<http://www.ilo.org/public/english/protection/safework/cops/english/download/e931998.pdf>.

INTERNATIONAL LABOUR ORGANIZATION, CONVENTION 170 CONCERNING SAFETY IN THE USE OF CHEMICALS AT WORK (1990), <http://www.ilo.org/ilolex/cgi-lex/convde.pl?C170>.

International Law Commission, "Text of draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities adopted by the Commission on first reading," in *Report of the International Law Commission – 55th Session*, at 153, UN Doc. A/59/10 (2004), <http://www.un.org/law/ilc/reports/2004/english/chp7e.pdf>.

INTERNATIONAL MARITIME ORGANIZATION, INTERNATIONAL CONVENTION ON THE ESTABLISHMENT OF AN INTERNATIONAL FUND FOR COMPENSATION FOR OIL POLLUTION DAMAGE (1971), http://www.imo.org/Conventions/contents.asp?topic_id=660.

INTERNATIONAL MARITIME ORGANIZATION, INTERNATIONAL CONVENTION ON CIVIL LIABILITY FOR OIL POLLUTION DAMAGE (1969),
http://www.imo.org/Conventions/contents.asp?topic_id=660.

L. Kramer, *EEC Treaty and Environmental Protection*, 61 THOMSON PROFESSIONAL PUB CN (1990).

Life-Cycle Assessment for Buildings: Seeking the Holy Grail Feature, ENVIRONMENTAL BUILDING NEWS (March 2002),
<http://www.buildinggreen.com/auth/article.cfm?fileName=110301a.xml>.

Moltke, K. von, *The Vorsorgeprinzip in West German Environmental Policy*, in TWELFTH REPORT, ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION (1988).

MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER (2000),
<http://www.unep.org/ozone/Montreal-Protocol/Montreal-Protocol2000.shtml>.

OECD CONVENTION ON COMBATING BRIBERY OF FOREIGN PUBLIC OFFICIALS IN INTERNATIONAL BUSINESS TRANSACTIONS (1998),
http://www.oecd.org/document/21/0,2340,en_2649_34859_2017813_1_1_1_1,00.html#text.

OECD CONVENTION ON THIRD PARTY LIABILITY IN THE FIELD OF NUCLEAR Energy (1960),
http://www.nea.fr/html/law/nlparis_conv.html.

OECD Council, *Recommendation of the Council on Guiding Principles Concerning International Economic Aspects of Environmental Policies*, C(72)128 (1972), <http://www.ciesin.org/docs/008-574/008-574.html>.

OECD, Chemical Group and Management Committee, *Series on Pesticides Number 6* (1998), <http://www.olis.oecd.org/olis/1998doc.nsf/LinkTo/env-mc-chem%2898%2920>.

OECD, *Recommendation of the Council Concerning the OECD List of Non-Confidential Data on Chemicals*, C(83)98/Final (1983), [http://webdomino1.oecd.org/horizontal/oecdacts.nsf/linkto/C\(83\)98](http://webdomino1.oecd.org/horizontal/oecdacts.nsf/linkto/C(83)98).

ORGANIZATION OF AMERICAN STATES, INTER-AMERICAN CONVENTION AGAINST CORRUPTION (1996), <http://www.oas.org/juridico/english/Treaties/b-58.html>.

OUR COMMON FUTURE: THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT (The Bruntland Report) (G. Bruntland ed., Oxford Press 1987).

PERREZ, FRANZ XAVER, COOPERATIVE SOVEREIGNTY: FROM INDEPENDENCE TO INTERDEPENDENCE IN THE STRUCTURE OF INTERNATIONAL ENVIRONMENTAL LAW (The Hague: Kluwer Law Int'l. 2000).

Perrez, Franz Xaver, *Precaution from Rio to Johannesburg: An Introduction*, in PRECAUTION FROM RIO TO JOHANNESBURG: PROCEEDINGS OF A GENEVA ENVIRONMENT NETWORK ROUNDTABLE (May 2002).

Perrez, Franz Xaver, *The World Summit on Sustainable Development: Environment, Precaution and Trade—A Potential for Success and/or Failure*, 12 RECIEL 15 (2003).

Pesticides Action Network (PAN) Pesticides Database, <http://www.pesticideinfo.org/Index.html>.

Rao, P.S., *International Liability for Transboundary Harm*, 34 ENVTL. POL'Y & L. 224 (2004).

Report of the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for the Application of the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade on the Work of Its First Session, UNEP/FAO/PIC/INC.1/10 (1996), <http://www.pic.int/incs/inc1/cop01.asp>.

Report of the Second Session of the Preparatory Committee for the Development of a Strategic Approach to International Chemicals Management, annex IV, SAICM/PREPCOM.2/4 (16 Nov. 2004), <http://www.chem.unep.ch/saicm/meeting/prepcom2/Default.htm>.

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

Sheridan, Vivian, "Seventy Years of Safety: Fluorocarbon Refrigerants," available at http://www.dupont.com/suva/emea/pdf/ref_history.pdf.

Siegal, Charles D., *Rule Formation In Non-Hierarchical Systems*, 16 TEMP. ENVTL. L. & TECH. J. 173 (1998).

Sobel, Elizabeth, *10 Things You Need to Know About Public-Private Partnerships*, EUBUSINESS (2003), <http://www.eubusiness.com/topics/CSR/EUNews.2003-10-01.4252>.

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

STOCKHOLM DECLARATION OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT (Stockholm Declaration), U.N. Doc. A/CONF.48/14 (1972), <http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=97&ArticleID=1503>.

Svoboda, Susan, *Note on Life Cycle Analysis* (National Pollution Prevention Center for Higher Education, March 1995), <http://www.umich.edu/~nppcpub/resources/compendia/CORPpdfs/CORPlca.pdf>.

Swiss Agency for the Environment, Forests and Landscape (SAEFL), Intersessional work on principles and approaches: Terms of References (24 Mar. 2005), available at <http://www.chem.unep.ch/saicm/meeting/intsession/PrinciplesStudy.pdf>.

Switzerland, Govt. of, *The Precautionary Principle in Switzerland and Internationally* (Synthesis Paper by the Interdepartmental Working Group on the Precautionary Principle 2003), <http://www.bag.admin.ch/themen/weitere/vorsorge/e/index.htm>.

TOXIC SUBSTANCES CONTROL ACT (TSCA), 15 U.S.C. § 2601 *et seq.*, <http://www.epa.gov/region5/defs/html/tsca.htm>.

U.S. FOOD QUALITY PROTECTION ACT OF 1996, 7 U.S.C. §136, <http://www.epa.gov/oppfead1/fqpa/gpogate.pdf>.

UN ECONOMIC COMMISSION FOR EUROPE, KIEV PROTOCOL ON POLLUTANT RELEASE AND TRANSFER REGISTERS, ECE/MP.PP/2003/1 (2003), <http://www.unece.org/env/pp/prtr/docs/PRTR%20Protocol%20English.pdf>.

UN FRAMEWORK CONVENTION ON CLIMATE CHANGE (1992), <http://unfccc.int/resource/docs/convkp/conveng.pdf>.

UN GENERAL ASSEMBLY, RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT, U.N. Doc. A/CONF.151/26 (Vol. I) (1992), <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>.

UN GENERAL ASSEMBLY, UNITED NATIONS MILLENNIUM DECLARATION, U.N. Doc. A/Res/55/2 (2000), <http://www.un.org/millennium/declaration/ares552e.pdf>.

UN Millennium Development Goals (MDG), *available at* <http://www.un.org/millenniumgoals/>.

UNEP GLOBAL MINISTERIAL ENVIRONMENT FORUM (GMEF), MALMÖ MINISTERIAL DECLARATION (2000), http://www.unep.org/malmo/malmo_ministerial.htm.

UNEP Governing Council, *International Environmental Governance*, Decision SS.VII/1 adopted at its seventh special session (Feb. 2002), http://www.unep.org/dpdl/IEG/Meetings_docs/index.asp.

UNEP, *The National Cleaner Production Centres: Building and Supporting Local Capacity* (undated), <http://www.uneptie.org/pc/cp/ncpc/NCPCs%20Note.doc>.

UNIDO, *Information Document on Cleaner Production Provided by the United Nations Industrial Development Organization*, SAICM/PREPCOM.2/INF/4 (2004), http://www.chem.unep.ch/saicm/meeting/prepcom2/saicm2_infs/saicm2_inf4/INF4UNIDO.PDF - May 25, 2005.

UNITAR Chemicals and Waste Management Programme, “Design and Implementation of National Pollutant Release and Transfer Registers (PRTRs),” <http://www.unitar.org/cwm/b/prtr/>.

UNITAR, *Developing and Sustaining an Integrated National Programme for Sound Chemicals Management* (2004), http://www.unitar.org/cwm/ptf/Ptf10/PTF_10_4_GD.pdf.

UNITAR, *Planning and Implementing a National Action Programme for Integrated Chemicals Management* (1997), http://www.unitar.org/cwm/publications/current/inp/nap_gd_1997.pdf.

UNITED NATIONS CONVENTION AGAINST CORRUPTION, U.N. Doc. A/58/422 (2003, not yet entered into force), http://www.unodc.org/pdf/crime/convention_corruption/signing/Convention-e.pdf.

United Nations Economic Commission for Europe, “Protocol on Pollutant Release and Transfer Registers,” <http://www.unece.org/env/pp/prtr.htm>.

United States Environmental Protection Agency, “Pesticides: Freedom of Information Act,” <http://www.epa.gov/pesticides/foia/glossary.htm>.

University of Auckland, New Zealand & Basel Convention Secretariat, *Destruction and Decontamination Technologies for PCBs and Other POPs Wastes* (2001), <http://www.basel.int/pub/pcb1.pdf>.

Wiser, Glenn M., Wiser, *Transparency in 21st Century Fisheries Management: Options for Public Participation to Enhance Conservation and Management of International Fish Stocks*, 4 J. INT’L WILDLIFE L. 95 (2001), available at <http://www.ciel.org/Publications/trans21cenfisheriesmgmt.pdf>.

Working Group on Community Right-to-Know, “Governmental Initiatives,” <http://www.crtk.org/international.cfm>.

Working Group on Community Right-to-Know, “Information Reform,” <http://www.crtk.org/informationreform.cfm>.

WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT PLAN OF IMPLEMENTATION (2002), http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf.