



## AN OVERVIEW OF MAJOR MULTILATERAL ENVIRONMENTAL AGREEMENTS ON HAZARDOUS CHEMICAL MANAGEMENT\*

***Abstract:** The international community has developed a number of multi-lateral environmental agreements (MEA) including the Basel Convention, the Rotterdam Convention and the Stockholm Convention to improve the management of chemicals and minimize the harm caused by chemicals, especially toxic and hazardous chemicals. The paper provides an overview of MEAs and other international mechanisms of chemical management. It focuses on institutional aspects of toxic and hazardous chemical management and the prevention of environmental pollution in an attempt to help developing countries improve their chemical management systems and strengthen their capacity in environmental pollution prevention.*

### 1. Introduction

The development of the chemicals industry not only brings benefits to people's daily lives, but also the risk of harm to the human health and the environment. According to UNEP (2006), global chemical production is set to climb by as much as 80 percent over the next 15 years with much of that production is shifting from the developed to the developing world (UNEP, 2006).

Environmental disasters and emergency incidents in the past have caught much attention from the

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For more information on and other reports of the World Bank "China: Addressing Water Scarcity" AAA Program, please contact Jian XIE, The World Bank, 1818 H Street, NW, Washington D.C, 20433, USA, Fax: 202-522-1666, Email: [jxie@worldbank.org](mailto:jxie@worldbank.org); or visit the program website at <http://www.worldbank.org/eapenvironment/ChinaWaterAAA>

international community on the adverse effects of chemical releases on the environment and human health, and, as a result, on the actions of chemical management at both international and local level.

Under UNEP's auspices, a number of multi-lateral environmental agreements (MEAs) have been developed to provide an international framework governing the environmentally sound management of toxic and hazardous chemicals throughout their lifecycles (UNEP, 2003). These include the Basel Convention, the Rotterdam Convention and the Stockholm Convention. The institutional arrangements and management instruments are laid out in these MEAs which are legally binding obligations for the parties which declare that they comply with the convention and fulfill the obligations by ratification, approval, acceptance and accession of the convention.

This note gives a brief overview of the three MEAs and other key international mechanisms in this area, with a focus on institutional aspects. It aims to provide a useful reference in the management of toxic and hazardous chemicals and environmental pollution prevention in developing countries where chemical management systems are in an early stage of development.

## **2. Common Requirements of the Basel Convention, the Rotterdam Convention, and the Stockholm Convention**

There are a few aspects in common in the three MEAs. They include institutional arrangements for implementation, the provision of technical assistance, the need for information exchange, and financing measures.

### *2.1 Institutional arrangements for implementation*

a) Competent Authorities and Focal Points. To ensure implementation, all three Conventions require the parties to designate or establish one or more competent authorities and one focal point. The focal point is responsible for exchanging information. For the Rotterdam Convention, national competent authorities can be designated and authorized to act on the Party's behalf in the performance of the administrative functions required by this Convention.

b) Technical review committees. The Conference of Parties (COP) is established individually for each of the three Conventions and the COP establishes the technical review committee as a subsidiary body, such as the *Chemical Review Committee of the Rotterdam Convention* (CRC) and the *Persistent Organic Pollutants Review Committee of the Stockholm Convention* (POPRC). The major responsibilities of the technical review committees are to assess whether a certain chemical should be covered and then make the corresponding proposals to COP for final decisions.

c) Compliance committees, for example, *the Committee for Administering the Mechanism for Promoting the Implementation and Compliance of the Basel Convention* and the *Compliance Committee of the Rotterdam Convention*, were established for each convention. They assist the

parties to comply with their obligations under the conventions and facilitate, promote, monitor and ensure the implementation of and compliance with the obligations under the Convention.

## *2.2 Technical Assistance*

Parties to the three Conventions recognize that the rendering of timely and appropriate technical assistance to developing countries and the economies in transition is essential to the successful implementation of these Conventions. The Basel Convention and the Stockholm Convention established regional centers for training and technology transfer to help build capacities in these countries. The core functions of the regional and sub-regional centers of the Stockholm Convention also include consulting and awareness-raising regarding the management and minimization of hazardous and other wastes. The Rotterdam Convention requires the parties with more advanced programs for regulating chemicals to provide technical assistance, including training, to the other parties for the development of their infrastructure and capacity to manage chemicals throughout their life-cycle.

## *2.3 Transmission and Exchange of Information*

Generally, the three Conventions require their parties to facilitate the exchange of scientific, technical and other relevant information. The Stockholm Convention requires each party to facilitate research on POPs alternatives. The parties are also required to promote and facilitate public awareness and education and public access to information.

## *2.4 Financing arrangements*

All of the Conventions established (General) Trust Funds and Technical Trust Funds. The (General) Trust Fund provides financial support for the ordinary expenditure of the Secretariats of the Conventions. The main resources are: (a) contributions made each year by the Parties to the Convention on the basis of an indicative scale adopted by consensus by the Conference of the Parties and based on such a scale of assessments of the United Nations as may be adopted from time to time by the General Assembly of COP and (b) contributions from States that are not a party to the Convention, other governmental, intergovernmental and non-governmental organizations and other sources.

The Technical Trust Fund provides financial support in particular for: (a) technical assistance, training and capacity building; (b) appropriate participation of the representatives from developing countries parties and of parties of the economies in transition. This kind of trust fund is mainly financed by voluntary contributions from all stakeholders.

# **3 The Basel Convention on the Control of Transboundary Movement of Hazardous Waste and Their Disposal (The Basel Convention)**

## *3.1 The substance covered by the Basel Convention*

For the purpose of this Convention, “wastes” are substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law. Wastes that are explosive, flammable, poisonous, infectious, corrosive, toxic or eco-toxic are covered by the Basel Convention. For example, clinical wastes from medical care in hospitals, medical centers and clinics are subject to this Convention. (The categories of wastes are set out in Annexes I to III of the Convention and the list of specific wastes characterized as hazardous or non-hazardous can be found in Annex VIII and Annex IX of the Basel Convention. )

### *3.2 History and brief introduction*

In response to concerns about toxic waste from industrialized countries being dumped in developing countries and countries with economies in transition (UNEP, 2003), the Basel Convention was adopted in 1989 and entered into force in 1992. As of August 22, 2005, there are 168 Parties to the Basel Convention including China. The fundamental aims of the Basel Convention are the control and reduction of transboundary movements of hazardous and other wastes subject to the Basel Convention, the prevention and minimization of their generation, the environmentally sound management of such wastes and the active promotion of the transfer and use of cleaner technologies.

During its first decade (1989-1999) , the Convention’s principal focus was the elaboration of controls on the “transboundary” movement of hazardous wastes, that is, the movement of such wastes across international frontiers (UNEP, 2003). Building on the significant achievement of the first decade of the Basel Convention, the Basel Declaration on Environmentally Sound Management (the Basel Declaration) was adopted as the guideline for the development of the Convention in its second decade (2000-2010) in 1999. The Basel Declaration emphasized the minimization of such wastes and the strengthening of capacity-building. In 2002 the Parties adopted the Strategic Plan for the Implementation of the Basel Convention (to 2010).

A so-called “Ban Amendment” was adopted in 1995 to strengthen the original “Prior Informed Consent” procedure. Currently 62 parties have ratified the Amendment. However it has not yet entered into force because it requires the ratification of at least three-fourths of the parties.

In 1999, the Protocol on Liability and Compensation for Damage Resulting from Trans-boundary Movements of Hazardous Wastes and Their Disposal (the Protocol on Liability and Compensation) was adopted and it will enter into force after 20 ratifications. The objective of the Protocol is to provide for a comprehensive regime for liability and for adequate and prompt compensation for damage resulting from the trans-boundary movement of hazardous wastes and other wastes and their disposal including illegal traffic in those wastes. By far, there are 13 signatories but none ratification yet for the Protocol.

In addition, the Basel Convention has adopted several technical guidelines to help Parties with the management of hazardous wastes in an environmentally friendly manner in accordance with the Convention.

### 3.3 Major Instruments introduced in the Basel Conventions

The Basel Convention imposes strict rules on the transboundary movement of hazardous wastes by the following management measures:

- The Prior Informed Consent procedure (PIC) should be implemented for transboundary movements between Parties, that is, the State of export shall notify, in writing, all the States affected by any proposed transboundary movement of such wastes. The State of export shall not allow the generator or exporter to commence the transboundary movement until it has received written consents from the State of import and the State of transit.
- Each Party shall not permit hazardous wastes or other wastes to be exported to a non-Party or to be imported from a non-Party.
- The Party of export has the duty to re-import the hazardous wastes or other wastes when the transboundary movement of such wastes cannot be completed with the terms of the contract, even when the consent of the Parties concerned has been given.

As soon as the Ban Amendment comes into force, it will prohibit the export of hazardous wastes for any purpose from countries listed in a proposed new annex (“Parties and other States which are members of OECD, EC, Liechtenstein”) to States not listed in its annex.

The Basel Convention requires each party to:-

- introduce appropriated national/ domestic legislation to prevent and punish illegal traffic.
- take the appropriate measures to minimize waste generation.
- ensure, to the extent possible, the availability of disposal facilities within its own territory.
- prohibit all persons under its national jurisdiction from transporting or disposing of hazardous wastes or other wastes unless such persons are authorized or allowed to perform such types of operations.

## **4 The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (the Rotterdam Convention).**

### *4.1 The substances covered by the Rotterdam Convention*

This Convention applies to the banned or severely restricted chemicals and severely hazardous pesticide formulations that are approved by the Conference of Parties. At present, 37 chemicals are covered by this Convention, including:

- 24 pesticides (2,4,5-T and its salts and esters, aldrin, etc)

- 6 severely hazardous pesticide formulation (dustable powder formulations containing a combination of benomyl at or above 7 per cent, ect. )
- 7 industrial chemicals.

The full list of the covered substances can be found in Annex III of the Rotterdam Convention. The list is subject to change.

#### *4.2 History and brief introduction*

Dramatic growth in chemicals production and trade during the past three decades has highlighted the potential risks posed by hazardous chemicals and pesticides (UNEP, 2003). Countries lacking adequate infrastructure to monitor the import and use such substances were particularly vulnerable (UNEP, 2003). In the 1980's UNEP and the Food and Agriculture Organization of the United Nations (FAO) developed voluntary codes of conduct and information exchange systems, culminating in the Prior Informed Consent (PIC) procedure introduced in 1989 (UNEP, 2003). The Rotterdam Convention replaces this arrangement with a mandatory PIC procedure (UNEP, 2003).

The Rotterdam Convention was adopted in 1998, and entered into force on February 24, 2006. As of May 12, 2006, 106 countries and the European Community were the parties to the Rotterdam Convention. China signed the Convention in 1999 and became a member in March 2005. The Convention is designed to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals, in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and disseminating these decisions to Parties. In other words, the Convention enables the world to monitor and control the trade in certain hazardous chemicals. It is not a recommendation to ban the global trade or use of specific chemicals; rather, it is an instrument to provide importing Parties with the power to make informed decisions on which of these chemicals they want to receive and to exclude those they cannot manage safely.

#### *4.3 Major Instruments Contained in the Rotterdam Convention*

a) Instruments on Notification - The Rotterdam Convention obliges each party to notify the Secretariat of the Convention of the following:

- information on the final regulatory actions taken to ban or severely restrict chemicals.
- responses concerning the future import of a chemical listed in Annex III.
- Provide an export notification to the importing party for any chemicals that are banned or severely restricted in its territory but not listed in Annex III of the convention.

b) Instruments on Listing and Removal of Chemicals from Annex III - The Rotterdam Convention provides different criteria and procedures for the chemicals banned or severely restricted and the severely hazardous pesticide formulations.

## **5 The Stockholm Convention on Persistent Organic Pollutants (the Stockholm Convention)**

### *5.1 Substances covered by the Convention*

The Stockholm Convention calls for international action on 12 Persistent Organic Pollutants (POPs) grouped into three categories: a) pesticides: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex and toxaphene; b) industrial chemical: hexachlorobenzene (HCB), polychlorinated biphenyls (PCBs); and c) unintentionally produced POPs: dioxins and furans. The list of POPs controlled by the Convention is open for future inclusion of other POPs.

### *5.2 History and brief introduction*

The Stockholm Convention was adopted in 2001 in response to the urgent need for global action to protect human health and the environment POPs. These are chemicals that are highly toxic, persistent, with a tendency to biologically accumulate and move long distances in the environment (UNEP, 2003). The Convention entered into force in 2004 and there are 124 Parties including China.

The Convention seeks the elimination or restriction of production and use of all intentionally produced POPs (i.e. industrial chemicals and pesticides). It also seeks the continuing minimization and, where feasible, ultimate elimination of releases of unintentionally produced POPs, such as dioxins and furans (UNEP, 2003). Stockpiles must be managed and disposed in a safe, efficient and environmentally sound manner.

### *5.3 Major Requirements and Instruments*

a) Instruments to Eliminate the Production, Use and Trade Restrictions of POPs. The Stockholm Convention introduces the following rules or measures:

- For POPs that are released from intentional production and use, each Party shall prohibit and/or to eliminate production and use of these chemicals.
- For chemicals released from unintentional production, such as polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF), hexachlorobenzene (HCB) and polychlorinated biphenyls (PCB), each Party shall take measures to reduce the total release derived from anthropogenic sources of each of them, and to ultimately eliminate them. Each Party shall promote the use of the best available techniques (BAT) and best environmental practices (BEP).

- The Parties are obliged to develop strategies for identifying POPs stockpiles and wastes, and to manage these in an environmentally sound manner.
- For new pesticides and industrial chemicals, each Party shall take measures to regulate with the aim of preventing the production and use of these chemicals, taking into account the characteristics of POPs.
- Parties shall take specific measures with respect to DDT and PCBs as defined in the Convention.
- The import and export of POPs are restricted to cases where, for example, the purpose is environmentally sound disposal.

b) Instruments on Specific Exemptions - On becoming a Party to the Convention, any State has the right to register for one or more types of specific exemptions for POPs that are released from intentional production and use. A Party may, at any time, withdraw an entry from the Register for a specific exemption upon written notification to the Secretariat. Generally all registrations of specific exemptions shall expire five years after the date of entry into force of this Convention with respect to a particular chemical. The Parties have the obligations to ensure that any production or use under such exemption or purpose is carried out in a manner that prevents or minimizes human exposure and release into the environment

c) Financial instruments - Currently, the Global Environment Facility (GEF) (as an interim measure) is the principal entity entrusted with the operations of the financial mechanism for the Stockholm Convention. A Memorandum of Understanding between the Conference of Parties (COP) of the Stockholm Convention and the Council of the GEF was adopted.

## **6 Other Major Intergovernmental Mechanisms to Improve International Chemicals Management**

### *6.1 Intergovernmental Forum on Chemical Safety (IFCS)*

IFCS was created by the International Conference on Chemical Safety held in 1994. The function of the IFCS is consultative and advisory, and it is a non-institutional arrangement. IFCS was adopted by acclamation of the Bahia Declaration in 2000. It is a statement to reaffirm commitment to the Rio Declaration, and to recommit to the challenges for chemical safety set in 1992 at Rio.

IFCS established the Forum Standing Committee (FSC) under the chairmanship of the President of the Forum, to provide advice and assistance in managing the process of preparations for Forum meetings, monitors progress on the work of the IFCS, and serves as a mechanism of the IFCS to effectively and efficiently initiate the process for the IFCS to respond to new developments and issues as they may arise.

Each government should have a single National Focal Point identified/communicated by the Minister of Foreign Affairs to act as a conduit for communication on IFCS activities and information dissemination. The World Health Organization (WHO) serves as the administering agency for the IFCS and its Secretariat. IFCS expenses are covered by voluntary contributions from member states and other IFCS participants. China is a member of IFCS. China State Environmental Protection Agency (SEPA) is the National Focus Point for the country.

### *6.2 The Strategic Approach to International Chemicals Management (SAICM)*

The idea of a SAICM was originated by the Governing Council of UNEP in various forms since 1995 (IISD, 2006). In the International Conference on Chemicals Management (ICCM) held in February 2006, SAICM was adopted by over 100 environment and health ministers to aim to use and produce chemicals in ways that minimize adverse effects to health and the environment (IISD, 2006). China is not a signatory country of SAICM yet.

SAICM consists of a high-level declaration (the Dubai Declaration on International Chemicals Management), an overarching policy strategy (OPS) and global action plan (GPA). The Dubai Declaration affirms that the sound management of chemicals is essential to the achievement of sustainable development. This high-level declaration gave political weight to the GPA and the OPS (IISD, 2006).

The OPS states that in implementing the SAICM, governments and other stakeholders should be guided by:

- (a) principles and approaches in the Stockholm and Rio Declarations, Agenda 21, the UN Millennium Declaration, the Johannesburg Plan of Implementation; the Bahia Declaration on Chemical Safety, and
- (b) the following agreements “where applicable to them”: the Montreal Protocol, the Basel Convention, the Rotterdam Convention, the Stockholm Convention, and etc.

The OPS contains guidance on an ICCM bureau and the functions of a SAICM secretariat, which will be established by the Executive Director of UNEP. It also states that UNEP and the World Health Organization (WHO) will take lead roles in the Secretariat in their respective areas of expertise.

## **7 Concluding Remarks**

The Basel, Rotterdam and Stockholm Conventions together cover key elements of “cradle-to-grave” management of hazardous chemicals, most comprehensively in the case of POPs, which are covered by all three treaties (UNEP, 2003). International hazardous chemical management is greatly enhanced with the framework composed by the three Conventions. Subject to views of the Conference of Parties and many Parties, it would be beneficial to enhance the cooperation and synergies between the three Conventions and other MEAs of chemicals and waste clusters.

The conventions have introduced a set of management measures to control specified chemicals. This provides a reference to developing countries for the development of their own chemical management systems. Also, by implementing the Conventions developing countries will constantly improve their capacity in this field with technology, information and financial support from the developed world.

However, the financial resources for the critical technical assistance to the developing countries are not predictable or adequate due to the voluntary basis for the contributions. It is an urgent issue for the international community to find sustainable resources to further future implementation.

As recognized by the International Conference on Chemicals Management, IFCS plays a unique and multifaceted role in the area of sound chemicals management. ICCM has invited IFCS to continue its role in contributing to the implementation of the Strategic Approach to international chemicals management and the work of other chemicals-related international organizations and institutions (IISD, 2006). The development is still evolving.

For SAICM, some critics say that the voluntary nature weakens the documented responsibilities not only in terms of the limited scope of industrial and agriculture chemicals, but also that the principles and approaches do not break any new ground. However, others expect that SAICM, as a “work in progress” will be strengthened in the future (IISD, 2006). The very existence and implementation of SAICM depends on whether enough and predictable funding will be provided to make SAICM sustainable in the medium and long-term.

## References and Useful Websites

International Institute for Sustainable Development (IISD), 2006, *GCSS-9 FINAL, Earth Negotiation Bulletin*, available online at: <http://www.iisd.ca/unepegc/unepps9>

UNEP, 2006, *New Global Chemicals Strategy Given Green Light by Governments*, UNEP News Release on 9<sup>th</sup> Special Session of the Governing Council of the United Nations Environment Programme / Global Ministerial Environment Forum, available online at [www.unep.org/gc/gcss-ix/](http://www.unep.org/gc/gcss-ix/)

The Basel Convention at: <http://www.basel.int>

The Rotterdam Convention at: <http://www.pic.int>

The Stockholm Convention at: <http://www.pops.int>

IFCS website at: [http://www.who.int/ifcs/documents/ifcs\\_overview](http://www.who.int/ifcs/documents/ifcs_overview)

UNEP website at <http://www.unep.org>

The treaty section of the United Nations website at <http://untreaty.un.org/ENGLISH/bible/englishinternetbible/partI/chapterXXVII/treaty20.asp>

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