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TRANSPORTS OF WASTES, PESTICIDES AND OTHER CHEMICALS: THE INTERNATIONAL MANAGEMENT OF RISK

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ABSTRACT

This paper has two parts. First of all I am exploring the role of science and technology in the context of the Basel, Rotterdam and Stockholm Conventions. The successful implementation of these three Geneva-based wastes and chemicals conventions depends greatly on a proactive role of scientists, engineers and educators. Unfortunately, as the case of the very numerous asbestos victims shows, scientific knowledge and evidence does not necessarily translate into regulations which are based on scientific facts. There is a parallel here in the sense that in both the asbestos and the chemicals cases, concerned industries have resisted transparent cooperation with governmental authorities if it is not in their interest.

Despite an international consensus on the importance of technology transfer and capacity building, relatively little research has been undertaken on the effectiveness of institutional cooperative arrangements for promoting the development and dissemination of environmentally beneficial technologies, especially with a focus on these conventions. Part II then presents a short introduction for each of the three conventions.

1. TRADE IN HAZARDOUS SUBSTANCES AND THE ROLE OF SCIENCE AND TECHNOLOGY

The three Geneva-based Conventions on Transboundary movements of hazardous wastes and chemicals, i.e. the Basel Convention,² the Rotterdam Convention³ and the Stockholm Convention,⁴ address certain trade-related environmental issues, that is they are Multilateral Environmental Agreements (MEAs) which are included in the ambit of the WTO's Division on Trade and Environment as well as in the discussions and negotiations of its Committee on Trade and Environment (CTE). Furthermore, it is important to emphasize that issues related to trade and environment are negotiated in other WTO fora, especially the SPS and the TBT Committees, and the GATT Council under Art. XX covering exceptions to the WTO agreements. The relationship with the WTO is in most cases less complicated here than in the case of certain other MEAs such as the Cartagena Protocol on Biosafety of the Convention on Biological Diversity⁵ or the FAO's International Treaty on Plant Genetic Resources for Food and Agriculture⁶ because the purpose here is not to maximize trade; to the contrary, the purpose is to ban trade of the most dangerous substances and to regulate and restrict trade in many other cases which are less toxic. Nevertheless, the three MEAs fall into the general trade and environment debate in which of course the WTO represents the underpinning framework. I should clarify from the outset that I consider the multilateral approach to trade and environment issues through the WTO much preferable to any realistic alternatives, i.e. especially bilateral trade agreements which in most cases are worse for both the environment and for poverty alleviation in developing than the global trade regime.

The purpose of this exploratory study is to investigate the role of science and technology in the negotiation, in the further development, and in the implementation of these three conventions and more generally in related risk management at the intergovernmental level. The role and the importance of scientific and technological issues, questions – and also controversies – clearly vary considerably among MEAs. In the case of these three Conventions the technical ramifications are particularly important. At the scientific level one might perhaps assume that the understanding of the potential risks to public health and to the environment which is generated by trade in hazardous wastes and chemicals is relatively well understood in comparison for instance to genetically modified organisms and biodiversity, or climate change – let alone in comparison to nanotechnology products which are not even covered yet by an MEA in spite of the fact that they have now become an international industry weighing many billions of dollars with very serious potential threats to the environment and to public health.⁷ Nevertheless, there is a great deal of uncertainty

² Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Text of the Convention: <http://www.basel.int/text/con-e-rev.pdf>

³ The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. Text of the Convention: <http://www.pic.int/en/ConventionText/ONU-GB.pdf>

⁴ Stockholm Convention on Persistent Organic Pollutants. Text of the Convention: http://www.pops.int/documents/convtext/convtext_en.pdf

⁵ <http://www.cbd.int/biosafety/default.shtml>

⁶ <http://www.fao.org/AG/cgrfa/itpgr.htm>

⁷ Nanotechnology products engender very serious environmental and health risks since they can be highly hazardous (e.g. by passing across the blood-brain barrier), and once they have contaminated a body of water they are too small to be filtered or otherwise eliminated by any known chemical,

about the medium-term effects of the vast number of chemicals which have accumulated in the biosphere and in human tissues.

According to documentation provided by the US Environmental Protection Agency (EPA) in 1998, a complete package of basic information is available only on about 7 per cent of approximately 3000 chemical substances which are produced in large quantities, and for nearly half of them no information is available at all.⁸ There is much evidence, however, that some chemicals affect biological systems at very low concentrations, for instance by interfering with hormone systems at specific stages in the lifecycle of an organism. Even less is known about the effects on the human health of interacting chemicals.⁹ Chapman provides a fascinating and at the same time worrisome account on industrial stonewalling during the negotiations of the European Union's regulatory framework Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) which has come into force in 2007.¹⁰

Unfortunately, the role of science is probably even more questionable on the other side of the Atlantic. This role of science is at the center of a book by Chris Mooney *The Republican War on Science*¹¹ which examines numerous examples of such pressures and cover-ups by commercial interests the US under Republican Administrations, especially the present one. For instance in the case of mercury pollution, one of industrial society's most intractable and most persistent environmental problems,¹² he illustrates how certain industries and their representatives have successfully lobbied for a weakening of the Environmental Protection Agency's regulations in 2003.¹³

The key problems addressed by the three conventions are not only of a scientific but also of a technological and administrative nature. They include the capacity of a country to make available, or to have access to, the necessary financing for required infrastructures at all levels, such as the professional education of the specialists involved, as well as the communication of risks to the public at large, the political will to act upon potential risks in light of other governmental priorities, or the wherewithal to put in place remedial measures once a spill or another chemical-related accident has happened. The legislative and regulatory framework at the national level are also key drivers of technology demand, cooperation, and transfer.

In order to put our discussion into the proper context it should be noted that there are links here to the trading regime at different levels. The CTE distinguishes between *non-binding discussions* on one hand, which are carried out on an ongoing basis by the CTE Regular Sessions, and *negotiations* on the other hand which are limited to the very narrow and specific mandate provided especially by paragraph 31 of the 2001 Doha Ministerial Declaration.¹⁴ These negotiations are handled

biological or technological means. See Christof Studer. 2006. L'infiniment petit en question. *Environnement* (2) 43-47 (Published by the Swiss Federal Office of the Environment).

⁸ Chapman, Anne. 2007. *Democratizing Technology - Risk, Responsibility and the Regulation of Chemicals*. London: Earthscan, 181 p., (60).

⁹ Idem.

¹⁰ Idem 75-77.

¹¹ Chris Mooney. 2005. *The Republican War on Science*. New York: Basic Books, 343 p.

¹² Noelle Eckley and Henrik Selin. 2006. Global Politics of Mercury Pollution: The Need for Multi-Scale Governance. *RECIEL* 15 (3): 258-270.

¹³ Mooney, *op. cit.* 136.

¹⁴ DOHA WTO MINISTERIAL 2001: MINISTERIAL DECLARATION, WT/MIN(01)/DEC/1 20 November 2001, Ministerial declaration, Adopted on 14 November 2001 http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm

separately by the CTE in Special Session (CTESS). The relationship between the three conventions and the WTO is not really affected specifically by the negotiations in the CTESS except that they are part of a group of about twenty MEAs which are of concern to the WTO because they contain trade-related provisions. Thus they are regularly included in trade and environment discussions among those MEAs which have the strongest trade-related pertinence, together especially with CITES, the Montreal Protocol, and the Cartagena Protocol on Biosafety.

In order to place this study in the appropriate wider context, we should be highly conscious of the *role of science* which indirectly very much underpins the present analysis, and which deserves a short digression. We shall take the case of asbestos which is particularly appropriate here because its difficult and risky but important removal from ship wrecks is one of the Basel Convention's ongoing concerns. Scientists have known for more than 100 years that the exposure to asbestos fibers has led to fatal lung diseases among many of British asbestos workers.¹⁵ In 1927 evidence of the disastrous health consequences of the inhalation of asbestos fibers was reported in Switzerland (home of the asbestos producer *Eternit*). The Swiss insurance for work-related health problems recognized the disease for the first time as early as 1939.¹⁶ This did not prevent the Swiss National Exhibition held in Lausanne in 1964 to vaunt asbestos as an exceedingly useful and valuable material for a large number of applications, and only in 1990 did the Swiss authorities prohibit asbestos as a construction material.¹⁷

Detailed statistics on asbestos-related diseases and fatalities have been maintained in industrialized countries for a long time, and billions of dollars have been spent over the past twenty years or so for the removal of asbestos-containing construction materials from buildings. The countless human tragedies due to asbestos-related diseases across the world have been well known for a very long time. It is truly difficult to comprehend why governments have not acted decades earlier, and why medical and other scientific researchers have not made far greater efforts to communicate the risks that they knew to be inherent in the handling of this material without very elaborate protective measures. The question arose at the WTO Dispute Settlement Body (DSB) whether asbestos and asbestos-containing products on one hand, and substitute products which have been on the market for a long time on the other hand, are equivalent, i.e. so-called "like" products. The DSB has ruled that they are not, and that the banning of these products for health reasons is WTO-

Trade and environment

31. With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome, on:

- (i) the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs). The negotiations shall be limited in scope to the applicability of such existing WTO rules as among parties to the MEA in question. The negotiations shall not prejudice the WTO rights of any Member that is not a party to the MEA in question;
- (ii) procedures for regular information exchange between MEA Secretariats and the relevant WTO committees, and the criteria for the granting of observer status;
- (iii) the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services.

We note that fisheries subsidies form part of the negotiations provided for in paragraph 28.

¹⁵ Gary Gardner. 2006. First Do No Harm. *World*Watch* January-February, 30-31, (31)

¹⁶ Urs Fitze. 2006. Impossible de démontrer l'innocuité du rayonnement. *Environnement 2* (Office fédéral de l'environnement). 47-49 (47).

¹⁷ Bernhard Raos. 2003. Lebensgefährliche Nachlässigkeit. *Beobachter* 28-31 (28).

compatible.¹⁸ As we can see, the long and tragic history of asbestos contamination due to incompetent governmental regulations and industry pressures to cover up scientifically established dangers represents by now a well-known illustration of the importance of the role of science in modern society and of the wide-ranging ramifications that may result from its action or inaction.

2. The Basel, Rotterdam, and Stockholm Conventions Regulating International Transports of Hazardous Wastes and Chemicals

There is a considerable discussion in the international environmental affairs literature on the issue of reorganizing the structures of global environmental governance,¹⁹ especially the question of establishing a new UN or World Environment Organization, or whether UNEP should be converted into a UN specialized agency.²⁰ The late Konrad von Moltke has been arguing, from the beginning of this debate, that MEAs ought to be *clustered* according to functional synergies which would make a closer cooperation beneficial.²¹ The three Geneva-based wastes and chemicals conventions have frequently been cited as the most likely candidates for increasing synergies by creating such a cluster. The mandate of each one of them is distinct and separate from that of the other two, but they all operate in the same broad issue area. These are the Conventions on transboundary movements of hazardous wastes and chemicals, i.e. the Basel Convention,²² the Rotterdam Convention on Prior Informed Consent,²³ and the Stockholm Convention on Persistent Organic Pollutants.²⁴ Thanks to important commonalities there are important areas where their tasks are to some extent similar and therefore may benefit from targeted efforts at increasing synergies. The three conventions are administered by the United Nations Environment Programme's UNEP Chemicals Programme²⁵ with the exception of the Rotterdam Convention that is jointly administered by FAO and UNEP. In addition, one should keep in mind two important initiatives whose discussion unfortunately has to wait for another day: (1) UNEP Chemical's Strategic Approach to International Chemicals Management (SAICM),²⁶ a new ambitious comprehensive institutional framework being developed with the objective of

¹⁸ EUROPEAN COMMUNITIES – MEASURES AFFECTING ASBESTOS AND ASBESTOS-CONTAINING PRODUCTS, WT/DS135/AB/R, 12 March 2001.

¹⁹ UNEP uses the term 'International Environmental Governance.'

²⁰ See for instance *Global Environmental Politics* Vol. 1 No. 1 Current Debate section on "A World Environment Organization."

²¹ Konrad von Moltke. 2001. The Organization of the Impossible. *Global Environmental Politics* 1 (1): 23-29.

²² Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Text of the Convention: <http://www.basel.int/text/con-e-rev.pdf>

²³ The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. Text of the Convention: <http://www.pic.int/en/ConventionText/ONU-GB.pdf>

²⁴ Stockholm Convention on Persistent Organic Pollutants. Text of the Convention: http://www.pops.int/documents/convtext/convtext_en.pdf

²⁵ <http://www.chem.unep.ch/chemicals/default.htm> and

<http://www.unep.org/themes/chemicals/?page=home>

<http://www.unep.org/themes/chemicals/?page=home>

²⁶ <http://www.chem.unep.ch/saicm/>

becoming an effective instrument of international chemicals policy,²⁷ which has developed a Quick Start Program that has its own trust fund;²⁸ (2) the Ad Hoc Joint Working Group (AHJWG)²⁹ whose mandate consists in enhancing cooperation, coordination and synergies among the three conventions. Let us look now briefly at each one of the three conventions.

The Basel Convention

The Basel Convention addresses the challenges posed by the generation, transboundary movement and management of hazardous wastes and other wastes. In the late 1980s, stricter environmental standards and higher disposal costs in developed countries increased the shipment of hazardous waste to countries that were not always able to adequately manage the waste. Improper management, indiscriminate dumping, and the accidental spill of wastes can result in, *inter alia*, air, water, and soil pollution that endangers entire communities, burdens countries with colossal clean up costs, and undermines prospects for development. A public outcry over the mounting evidence of uncontrolled movement and dumping of hazardous wastes, including incidents of illegal dumping in developing nations by companies from developed countries, led to the adoption of the Basel Convention in 1989. The Basel Convention came into force in 1992. Its fundamental aims are the control and reduction of transboundary movements of hazardous wastes and other wastes subject to the provisions of the Convention, the disposal and treatment of such wastes as close as possible to their source of generation, the reduction and minimization of their generation, the environmentally sound management of such wastes and the active promotion of the transfer and use of cleaner technologies.³⁰

The creation of the Basel Convention was further pushed ahead by some highly mediatised disastrous voyages of "toxic ships" such as the 'Pelicano'³¹ in 1986 or the 'Karin B' in 1988³² which focused the mind of the world's environmental authorities on the problem. It is the oldest and largest of the three Conventions in terms of the Secretariat's staff. All industrialized countries are parties except the United States who have signed it but not ratified,³³ it presently counts 170 members.³⁴

²⁷ Franz Xaver Perrez. 2006. The Strategic Approach to International Chemicals Management: Lost Opportunity or Foundation for a Brave New World? *RECIEL* 15 (3): 245-258.

²⁸ <http://www.chem.unep.ch/saicm/qsptf.htm>

²⁹ <http://ahjwg.chem.unep.ch/>

³⁰ UNEP Economics and Trade Branch (DTIE-ETB). 2007. Trade-related Measures and Multilateral Environmental Agreements, prepared by CIEL, 31 p. (15).

http://www.unep.ch/etb/areas/pdf/MEA%20Papers/TradeRelated_MeasuresPaper.pdf

³¹ <http://query.nytimes.com/gst/fullpage.html?res=940DE1DC163DF93BA15752C1A96E948260>

³² <http://query.nytimes.com/gst/fullpage.html?res=940DEFDC1F38F930A3575AC0A96E948260&sec=&spon=&pagewanted=print>

³³ On 13 March 1996, the Secretary-General received from the Government of the United States of America, the following communication:

"(1) It is the understanding of the United States of America that, as the Convention does not apply to vessels and aircraft that are entitled to sovereign immunity under international law, in particular to any warship, naval auxiliary, and other vessels or aircraft owned or operated by a State and in use on government, non-commercial service, each State shall ensure that such vessels or aircraft act in a manner consistent with this Convention, so far as is practicable and reasonable, by adopting appropriate measures that do not impair the operations or operational capabilities of sovereign immune vessels.

The convention is based on the principle of Environmentally Sound Management (EMS) which it subdivides into three separate levels: (1) The minimization of the generation of hazardous wastes is a strategy which takes into consideration the integrated life cycle of a product from mining, growing or otherwise accumulating the raw materials to manufacturing and use all the way to the final disposal. (2) Hazardous wastes should be treated and disposed of as close as possible to the location where they were created. In practice, however, this principle needs to be qualified by the need to dispose of numerous products in industrial incinerators rather than simply burning them close by which tends to release much more toxic emissions. The convention has elaborated a number of technical guidelines for recycling, disposal of specific groups of waste, and for the rehabilitation of old dumps. (3) International movements of hazardous waste should be minimized. Exporters or brokers must obtain from the government of the exporting state prior written consent issued by the competent authorities of the state of import and any transit country.³⁵

The incineration of hazardous wastes has become a large industry, it is essentially monopolized by about half a dozen corporations.³⁶ Significant changes have occurred in business practices with regard to waste management and disposal. The rapidly advancing concentration and globalization process of the waste management industry has led to the adoption of certain industrial patterns ("templates")³⁷ leading to strong lobbying groups and very serious questions about technical cooperation practices, especially with regard to recycling³⁸ and the touchy relationship between the Basel ban and illegal trade flows.³⁹ The pressures and lobbying efforts of local as well as international commercial interests which attempt to maintain a lucrative international trade of recyclable scrap metals and other

(2) It is the understanding of the United States of America that a State is a 'Transit State' within the meaning of the Convention only if wastes are moved, or are planned to be moved, through its inland waterways, inland waters, or land territory.

(3) It is the understanding of the United States of America that an exporting State may decide that it lacks the capacity to dispose of wastes in an 'environmentally sound and efficient manner' if disposal in the importing country would be both environmentally sound and economically efficient.

(4) It is the understanding of the United States of America that article 9 (2) does not create obligations for the exporting State with regard to cleanup, beyond taking such wastes back or otherwise disposing of them in accordance with the Convention. Further obligations may be determined by the parties pursuant to article 12.

Further, at the time the United States of America deposits its instrument of ratification of the Basel Convention, the United States will formally object to the declaration of any State which asserts the right to require its prior permission or authorization for the passage of vessels transporting hazardous wastes while exercising, under international law, its right of innocent passage through the territorial sea or freedom of navigation in an exclusive economic zone."

<http://www.basel.int/ratif/convention.htm>

³⁴ <http://www.basel.int/ratif/convention.htm>

³⁵ *Minimizing Hazardous Wastes: A Simplified Guide*. 2005. Basel Convention. 18 p.

³⁶ Kate O'Neill. 2001. The Changing Nature of Global Waste Management for the 21st Century: A Mixed Blessing? *Global Environmental Politics* 1 (1): 77-98 (83).

³⁷ *Ibid.* 90.

³⁸ *Ibid.* 94.

³⁹ Eric Neumayer. 2001. *Greening Trade and Investment Without Protectionism*. London: Earthscan, 228 p. (165).

retrievable substances of commercial value complicate the task of achieving a responsible and transparent control over these very large material flows.⁴⁰

The early negotiations at the Basel Convention were, as the recently appointed Executive Secretary Dr. Katharina Kummer Peiry observed, “emotionally charged”⁴¹ during the first couple of Conferences of the Parties, and have since then become gradually more technically oriented. In 1995 the Parties to the Convention adopted the so-called Ban Amendment which is presently not yet ratified.⁴² This Amendment bans hazardous wastes exports for recycling as well as for final disposal from so-called Annex VII countries, i.e. OECD members, to non-Annex VII countries which are composed of all the other Parties. In 1999 a Liability Protocol was adopted which so far has only 8 Parties out of 20 that are required for entry into force,⁴³ but which nevertheless represented a significant legal breakthrough for the still new convention.⁴⁴ Finally, in 2002 a Compliance Committee was established which consist of 15 members drawn in equal numbers from the five regional groups. Its task is to assist members who encounter difficulties in implementing the convention, e.g. in dealing with illegal shipments or meeting reporting requirements. Submissions can be made to the Committee by a Party about its own compliance or implementation difficulties, or about another Party's difficulties, or by the Secretariat when it becomes aware, through national reporting, that a Party may be experiencing difficulties.⁴⁵ As a pioneering innovation, it may significantly influence the respective negotiations at the Rotterdam and Stockholm Conventions and other MEAs.⁴⁶

Technical cooperation includes relevant organizational and institutional arrangements such as especially public-private partnerships (PPP) which are particularly important for the Basel Convention.⁴⁷ These PPPs represent an important aspect in the context of the rise of private enterprise involved in the execution of tasks in the environmentally sound waste management. The incineration of hazardous waste is an important example of this increasingly widespread kind of division of work. Thus the Basel Convention's Secretariat cooperates for example with Holcim, one of the world's largest cement suppliers in the management of the

⁴⁰ Kate O'Neill, 2001, *op. cit.* 94-96.

⁴¹ Katharina Kummer. 1998. The Basel Convention: Ten Years On. *RECIEL* 7 (3): 227-237, 230.

⁴² Total number of ratifications: 63. Entry into force shall take place upon ratification by at least three-fourths of the Parties who accepted it.

⁴³ Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and Their Disposal

<http://www.basel.int/meetings/cop/cop5/docs/prot-e.pdf>

⁴⁴ Kanami Ishibashi. 2003. Environmental Measures Restricting the Waste Trade. In *Economic Globalization and Compliance with International Environmental Agreements*, edited by Alexandre Kiss, Dinah Shelton and Kanami Ishibashi, 59-74. The Hague: Kluwer Law International (62). Botswana, Congo (Republic), Congo (Democratic Republic), Ethiopia, Ghana, Liberia, Syria, Togo.

⁴⁵ 2002 Compliance Mechanism - The Compliance Mechanism, adopted at COP6 in December 2002, promotes the identification, as early as possible, of implementation and compliance difficulties encountered by Parties.

<http://www.basel.int/legalmatters/compcommitee/index.html>

⁴⁶ Akiho Shibata. 2003. The Basel Compliance Mechanism. *RECIEL* 12 (2): 183-198 (198).

⁴⁷ The Basel Convention has a *Partnership Programme* which originates in the 1999 Ministerial Basel Declaration on Environmentally Sound Management. The text of this “Framework for Cooperation with Industry (31 Oct. 2002)” is available at

<http://www.basel.int/meetings/cop/cop6/english/32a1e.pdf>

incineration of hazardous wastes in cement kilns.⁴⁸ The Secretariat is also involved in the management of electrical and electronic waste,⁴⁹ an initiative which illustrates developing countries' difficulties in coping with definitional difficulties such as establishing what kind of waste falls under which provisions.⁵⁰ Another important example is the Africa Stockpiles Programme which involves over a dozen partners such as UNEP, FAO, WHO, WWF and the GEF.⁵¹ PPPs in certain sectors of environmental management have assumed a very important role in many cases, which has prompted Robert Falkner of the London School of Economics to explore the linkages of Global Environmental Governance with private enterprise, especially with regard to waste management.⁵² He concludes that "private governance has become a reality in global environmental politics that few analysts deny," but cautions that there is not enough information available to evaluate the effects of this complex interdependence between private and public actors. He emphasizes in fact that this kind of research "needs to move center-stage in the study of international environmental politics."⁵³

The Rotterdam Convention

The Rotterdam Convention provides countries considering the importation of certain hazardous pesticides and chemicals the tools and information they need to identify potential risks and exclude chemicals they cannot manage safely. In addition, if a country agrees to import chemicals, the Rotterdam Convention promotes their safe use through labelling standards, technical assistance, and other forms of support. Hazardous pesticides and other chemicals create significant risks to human health and the environment, killing or seriously affecting the health of thousands of people every year and also damaging the natural environment and many wild animal species. Governments began to address the problem in the 1980s by establishing a voluntary Prior Informed Consent (PIC) procedure and in 1998 strengthened the procedure by adopting the Rotterdam Convention, which makes PIC legally binding. The Rotterdam Convention has two primary objectives. First, it aims 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. Second, it seeks to contribute to the environmentally sound use of those chemicals by facilitating information exchange about their characteristics.⁵⁴

An important characteristic of the Prior Informed Consent (PIC) Convention is its bicephalous Secretariat, with its double venues of Rome, where it is administered by FAO, and Geneva, administered by UNEP Chemicals. Adopted in 1998 in Rotterdam,

⁴⁸ Information on this joint venture is provided by the Basel Convention's short description of its involvement in a project in the municipality of Guayaquil, as well as other municipalities in Ecuador at www.basel.int/press/environment-day-2005.doc

⁴⁹ René Vossenaar, Lorenzo Santucci and Nudjarin Ramungul. 2006. Environmental Requirements and Market Access for Developing Countries: the Case of Electrical and Electronic Equipment. In *Trade and Environment Review 2006*, 61-91. Geneva: UNCTAD.

⁵⁰ Constanza Martinez. 2006. Electrical and Electronic Equipment Waste and the Basel Convention, Annex I. In *Trade and Environment Review 2006*, 92-95. Geneva: UNCTAD.

⁵¹ <http://www.africastockpiles.org/>

⁵² Rober Falkner. 2003. Private Environmental Governance and International Relations: Exploring the Links. *Global Environmental Politics* 3 (2): 72-88.

⁵³ *Ibid.* 84.

⁵⁴ UNEP Economics and Trade Branch (DTIE-ETB). 2007. Trade-related Measures and Multilateral Environmental Agreements, prepared by CIEL, 31 p. (18).
http://www.unep.ch/etb/areas/pdf/MEA%20Papers/TradeRelated_MeasuresPaper.pdf

it entered into force in 2004. All industrialized countries are parties except the US and Israel.⁵⁵ The framing of technology-related issues in a perspective which emphasizes technical cooperation activities is particularly important for the Rotterdam Convention as Paula Barrios explicitly confirms:

...[the Rotterdam Convention] reflects the mistaken assumption that information will by itself improve the capacity of developing countries to implement its provisions. Instead, experience gained from the voluntary system reveals that enhancing the ability of these countries to analyze chemical data, to test chemicals under their own conditions, to document and report poisoning incidents, and generally to safely manage hazardous chemicals, is essential for the successful implementation of the PIC procedure.⁵⁶

Indeed, the PIC procedure may be quite difficult for developing countries to implement, yet achieving compatibility between the two regimes is of crucial importance for the effectiveness of the convention.⁵⁷ Unlike the Basel Convention and the Cartagena Protocol, Rotterdam lacks a re-importation obligation.⁵⁸ It is crucial for technical cooperation to be effective that importing developing countries have an institutionalized and operationalized understanding of the complex processes and procedures which govern these rights and obligations that are sometimes difficult to reconcile for a WTO Member and MEA Party.^{59 60}

The PIC procedure finds its roots in Article 9 of the FAO's 1986 *International Code of Conduct on the Distribution and Use of Chemicals*, a voluntary set of chemical standards for the handling and transport of pesticides. The transformation of this voluntary standard into a binding procedure occurred in the 1990s, it was pushed to an important extent by two NGOs, the Pesticide Action Network (PAN) and by Oxfam. It was, however, the change of heart of US and UK industry coalitions which provided the decisive momentum. The *Groupement international des associations de fabricants de produits agrochimiques* (GIFAP) in its 1991 annual report announced its support for the FAO/UNEP efforts to implement the PIC procedure because it seems to have feared that the alternative would be an outright prohibition of the export of certain pesticides, specifically a bill debated in the US during 1991-92 which proposed export controls for certain pesticides. GIFAP

⁵⁵ Ratifications : <http://www.pic.int/home.php?type=t&id=63>

⁵⁶ Paula Barrios. 2004. The Rotterdam Convention on Hazardous Chemicals: A Meaningful Step Toward Environmental Protection? *Georgetown International Environmental Law Review*, Summer issue (online version).

http://findarticles.com/p/articles/mi_qa3970/is_200407/ai_n9429400 (section one)

⁵⁷ Katharina Kummer. 1999. Prior Informed Consent for Chemicals in International Trade: The 1998 Rotterdam Convention. *RECIEL* 8 (3): 323-330.

⁵⁸ Redgwell, Catherine. 2003. Regulating Trade in Dangerous Substances : Prior Informed Consent under the 1998 Rotterdam Convention. In *Economic Globalization and Compliance with International Environmental Agreements*, edited by Alexandre Kiss, Dinah Shelton and Kanami Ishibashi, 75-88. The Hague: Kluwer Law International.

⁵⁹ Ibid. 86: *Relationship with the WTO Agreements* "... Controversy on this point appears to be inherent in multilateral environmental negotiations addressing transboundary transfer of potentially hazardous substances, since they deal with the interface of environmental and trade considerations."

⁶⁰ Ted L. McDorman. 2004. The Rotterdam Convention on Prior Consent: Some Legal Notes. *RECIEL* 13 (2): 187-200.

therefore was able to avoid this worse scenario by supporting the FAO/UNEP PIC procedure as the lesser evil.⁶¹

Thus the Rotterdam convention represents a compromise between environmental and health objectives on one hand, and export industries' interests on the other hand. At the beginning health objectives were predominant, environmental objectives were resisted during the negotiations but in the end they achieved equal ranking.⁶² Interactions on the management of pesticides between the Rotterdam Convention, WTO, and also the much older but constantly renegotiated Codex Alimentarius pesticide standards don't appear to generate a large amount of interest. This may be explained by the fact that the question of the right an importing country has under any given agreement to use a precautionary approach to risk management determines to a large extent its relationship with the WTO, and also to the Codex where the question of precaution has long been a touchy issue which is still not resolved.⁶³ Now what is the position of the Rotterdam Convention with regard to precaution? It mentions the term 'precaution' twice but in a manner which is quite innocuous for the trade regime:

Information exchange

3. The following information shall not be regarded as confidential for the purposes of this Convention:

(d) Information on precautionary measures, including hazard classification, the nature of the risk and the relevant safety advice;

Annex V

INFORMATION REQUIREMENTS FOR EXPORT NOTIFICATION

1. Export notifications shall contain the following information:

(e) Information on precautionary measures to reduce exposure to and emission of, the chemical;

The Stockholm Convention and UNEP/DGEF

The Stockholm Convention is a global treaty focused on protecting human health and the environment from persistent organic pollutants (POPs). POPs are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms, and are toxic to humans and wildlife. With the evidence of long-range transport of these chemicals to regions where they have never been used or produced and the consequent global threats they pose to human health and the environment, States recognized the need for global actions to reduce and eliminate releases of these chemicals... In order to achieve its objective, the Stockholm Convention seeks to eliminate or restrict the production and use of intentionally produced POPs. It also seeks to continue minimizing and, where feasible, ultimately eliminate releases of unintentionally produced POPs. In addition, the Stockholm Convention requires Parties to develop strategies for identifying POPs stockpiles and wastes and to ensure that they are managed or disposed of in an environmentally sound manner.⁶⁴

⁶¹ Peter Hough. 2003. Poisons in the System: The Global Regulation of Hazardous Pesticides. *Global Environmental Politics* 3 (2): 11-24 (15-16).

⁶² Idem

⁶³ Ibid. 17.

⁶⁴ UNEP Economics and Trade Branch (DTIE-ETB). 2007. Trade-related Measures and Multilateral Environmental Agreements, prepared by CIEL, 31 p. (23).
http://www.unep.ch/etb/areas/pdf/MEA%20Papers/TradeRelated_MeasuresPaper.pdf

The Convention on Persistent Organic Pollutants (POPs) was adopted in 2001 in Stockholm and has entered into force in 2004. Several industrialized countries have not yet ratified it.⁶⁵ POPs are chemicals which are known to bio-accumulate in body tissues, which is what makes them particularly dangerous. The evidence provided by Rachel Carson in 1962 about DDT which, as she was able to demonstrate scientifically, accumulated in living organisms at great distances from spraying locations can be considered to have triggered the awakening of the 20th century to the fact that potent environmental contaminants can travel long distances and threaten public health and the environment. They can be semi-volatile and travel hundreds of kilometers through cycles of evaporation and precipitation. The convention has singled out 12 POPs which can be divided into unintentional by-products (dioxins and furans), industrial chemicals (PCB is the best known), and the remainders which are pesticides, the largest group including DDT. This Convention is situated -- perhaps more than any other MEA -- right at the interface between environmental and health concerns and was shaped substantially by fears over threats to health like cancers or birth defects arising from toxic chemicals.⁶⁶

Technology-related concerns are reflected especially in measures to reduce or eliminate releases from unintentional production (Art. 5 and Annex C). Interestingly, however, the convention does not use the term 'technology transfer' at all, rather it emphasizes technical assistance, technical feasibility and similar expressions such as best available techniques and best environmental practices. As in the case of the Rotterdam Convention, the human aspects and the discussion of skills and capacities inherent in technical cooperation are stressed. The premises of technology-related debates have changed fundamentally over the past 10-15 years in that industrial production in developing countries has increased very much while at the same time climate change has become a major geopolitical issue.

An important technological and at the same time financial issue are electrical transformers filled with PBCs which need to be emptied and refilled with dielectric mineral oil. This replacement is so expensive that the operation is not carried out only to combat releases of furans and dioxins but other reasons such as the age of the transformer need to be taken into consideration also. These transformers have a life expectancy of about 40 years which is the reason why the phase-out of PCB is planned for 2025, i.e. 40 years from the time when these replacements got underway (at least in developed countries).

As far as this convention's positioning toward precautionary approaches is concerned, it does not discuss them in much detail but it is significant that precaution appears very prominently at the very beginning:

Article 1 Objective

Mindful of the precautionary approach as set forth in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Convention is to protect human health and the environment from persistent organic pollutants.

⁶⁵ Ireland, Israel, Italy, Malta, Poland, Russia, US.

⁶⁶ Pia M. Kohler. 2006. Science, PIC and POPs: Negotiating the Membership of Chemical Review Committees under the Stockholm and Rotterdam Conventions. *RECIEL* 15 (3) 293-303.

Precautionary measures are not really problematic with regard to the 12 original chemicals, but that is changing regarding new POPs whose addition to the list is being negotiated. In any case, these 12 chemicals may be considered to be the “low hanging fruit,” i.e. those chemicals where an agreement was achieved relatively easily because there is a large consensus on their dangers to public health and on their persistency in the environment. In any case, some have been replaced already, e.g. the three --drins due to their particularly high toxicity.

The Rotterdam and the Stockholm Conventions have comparable concerns at the level of technical cooperation through their respective Chemical Review Committees, i.e. respectively the Chemical Review Committee (CRC) and the POPs Review Committee (POPRC).⁶⁷

The Stockholm Convention is the only one of the three which benefits from ¹Global Environment Fund (GEF) financing, which has important organizational and procedural consequences.⁶⁸ UNEP's Division of GEF Coordination (UNEP DGEF) is cooperating with UNEP Chemicals and the Convention Secretariat. This cooperation is presently in an organizational transition period. Countries which benefit from GEF financing are expected to have established National Implementation Plans by 2008 when a new phase is starting. The GEF as an organization which was planned as a light structure is also undergoing change in that the original distinction between implementing agencies (World Bank, UNDP, UNEP) and executing agencies (UNIDO, FAO, IFAD) is increasingly getting blurred.

⁶⁷ Ibid.

⁶⁸ Boisson de Chazournes, Laurence. 2005. The Global Environment Facility (GEF): A Unique and Crucial Institution. *RECIEL* 14(3): 193-202.