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TRADE MEASURES IN THE BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL

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PREFACE

The drafting of the text of this report was completed prior to the Fourth Meeting of the Conference of the Parties to the Basel Convention (COP IV), held in Kuching, Malaysia, February 1998. As some of the issues discussed in the report were the subject of Decisions taken at COP IV, the relevant Decisions have been reproduced in Annex A to the Report.

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1. Introduction

The use of trade measures in multilateral environmental agreements (MEAs) has been an important component of the work programme of both the OECD Joint Session and the WTO Committee on Trade and Environment. Following the 1995 Joint Session Report to OECD Ministers [OCDE/GD(95)63], which dealt with the issue of the use of trade measures in MEAs in some depth, the Joint Session decided to pursue further analysis of these issues by examining the actual experience with the use of trade measures in specific agreements. The first of these case studies concerned the Convention on International Trade in Endangered Species, and is now published [OCDE/GD(97)106]. The second concerned the Montreal Protocol on Substances that Deplete the Ozone Layer, which has been published as OCDE/GD(97)230. This paper is the third in the series.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (hereinafter the Basel Convention or the Convention) was concluded at Basel, Switzerland, on 22 March 1989. It entered into force on 5 May 1992, and as of February 1998, 117 States plus the European Community are Parties, including all OECD countries, except the US (see Annex Table 1). Three meetings of the Conference of the Parties (COP) have already been held, each of which has taken significant steps in further developing the rules, the scope and the technical underpinnings of the Convention. Of particular importance in the trade and environment context, was the adoption by the third COP in 1995 of a Decision to amend the Convention. The amendment, once ratified, would prohibit immediately exports from countries listed in Annex VII (currently "members of the OECD, EC and Liechtenstein") to all other countries, of hazardous wastes intended for final disposal; and would prohibit movements from Annex VII to non-Annex VII countries of hazardous wastes intended for recycling or reuse as of end 1997. COP IV will be held in February 1998 in Malaysia, and is to adopt the list of wastes subject to the trade restrictions of the amendment, among other things.

The Basel Convention is quite young, and developing very quickly. Important aspects of the regime, including precise definitions of the wastes within its purview, are still being elaborated. Not surprisingly given the dynamic context, some problems are being encountered along the way as political momentum to take action at the international level has outpaced the development of the technical infrastructure needed to make commitments operational in some cases. This factor has contributed to the concerns that have arisen in the trade and business communities over some of the provisions of the Convention, notably the 1995 amendment, that affect commercial trade flows of recyclable wastes, i.e. secondary materials.

The issues raised by the Convention represent a very complex mixture of environmental, social, ethical, political, legal and economic factors that can not be given full treatment in this paper. In line with the mandate of the Joint Session, most attention is paid to the trade provisions, how they work, and how they relate to the environmental objectives of the Convention.

The structure of this paper is as follows. Section 2 describes the environmental problems addressed by the Convention, and the national and international (especially OECD) policy developments that constitute the context in which the Convention originated and operates. Section 3 describes the provisions of the Convention which control trade in hazardous wastes, the non-trade provisions, and the mechanism for defining what is a hazardous waste for the purposes of the Convention, including current work on that aspect. Section 4 examines the purpose and effectiveness of the trade measures, including the effects on the economics of hazardous waste recycling. Section 5 looks at how the Convention deals with compliance issues. Section 6 discusses the relationship between the Convention and the multilateral

trading system. Developing country aspects are intrinsic to the whole subject, but are also briefly discussed separately in Section 7, and some concluding remarks are made in Section 8.

2. The environmental context

International concern surrounding the environmental problems caused by transboundary movements of hazardous wastes existed already in the early 1980s, and was intensified by several high-profile cases of serious mismanagement and illegal movements of hazardous wastes later in the decade[1]. One of the most notorious cases, which spurred OECD action on hazardous wastes, was the 1983 "Seveso affair", when 41 "missing" drums of topsoil contaminated with highly toxic dioxin from the 1976 explosion at the Seveso chemical plant in Italy were discovered in a barn in Northern France. Another notorious case was the *Khian Sea*, a ship with a cargo of 15 000 tonnes of municipal incinerator ash which was at sea for two years, stopping at various Caribbean ports but failing to offload its cargo, before finally leaving some of it in Haiti, with the rest assumed dumped at sea. Another publicised case, among many, concerned highly toxic and radioactive waste, including 150 tons of Polychlorinated Biphenyl-contaminated waste from an OECD country found on farmland in Koko, Nigeria. Environmental NGOs, notably Greenpeace, and the international press were very successful in drawing world-wide attention to these incidents.

Very serious health and environmental damage can result from improper management of hazardous wastes. Impacts can range from direct human exposure to poisons and carcinogens, to longer term environmental damage from leaching of chemicals into soil and groundwater and concentration in food-chains. Knowledge on the health and the ecological impacts of hazardous substances is incomplete, particularly as concerns longer-term effects. Specific case studies however have linked community exposure to hazardous waste with increases in leukaemia, kidney cancer and respiratory disorders. These health and ecological damages also represent high economic costs: the cost of cleaning up toxic and hazardous sites alone, ignoring health costs, seems to have reached over a billion dollars in several countries[2]. The lack of information on the environmental damages caused by hazardous waste mismanagement, let alone those caused by transboundary movements, is a major barrier to understanding the extent of the environmental problem being addressed by the Convention.

Furthermore, environmental and health effects arise not only from cases of "dumping" or final disposal of hazardous wastes. As with other industrial activities, both final disposal and recycling operations can give rise to negative environmental effects. In the absence of adequate safeguards, recycling or recovery operations can pose greater human health problems than disposal, due to the higher levels of worker exposure and handling. Recycling or recovery operations which extract the valuable components of a hazardous waste will nevertheless end up with residual wastes. The quantitative proportion and the hazardousness of the final residual relative to the original shipment will vary widely. The point is that hazardous waste shipments destined for recovery or recycling may also have an inherent component destined for final disposal.

Given this imperfect knowledge and uncertainty about health and ecological impacts -- particularly over the long term and given ecological interdependence -- combined with the potential seriousness and irreversibility of damage to human health and environment mismanagement of hazardous waste can cause, the Convention can be said to rest on the precautionary principle. The international community has taken action through the Convention, in the absence of full documentation of the magnitude and impact of transboundary movements of hazardous wastes, as a precaution against potentially very serious and irreversible damage to human health and the environment.

2.1 Quantitative estimates of hazardous waste generation and transboundary movements

Widely divergent opinions exist on the aggregate amount of international hazardous waste generation and movements. Some writers in this field have argued that the known cases of severe mismanagement are but the 'tip of the iceberg', while others have suggested that the size of the problem has been exaggerated. As noted by the 1995 Global Waste Survey (International Maritime Organisation (IMO) 1995), "the level of quantitative information that is available on hazardous waste generation around the world is sparse".

One of the fundamental limitations on establishing magnitudes of waste-specific or destination-specific data on the international movements of hazardous waste is that trade data is collected at a level of aggregation that usually does not allow hazardous wastes to be distinguished from other wastes and products in the same statistical category[3]. Some hazardous wastes are extremely specific sub-categories of larger product groups and can not easily be identified. Work is ongoing within the Secretariat of the Basel Convention (SBC), the OECD and the World Customs Organisation to make trade data specific enough to identify hazardous wastes as separate items in the trade nomenclature. Work on refining the definitions of the hazardous wastes covered by the Convention is a separate but related issue -- see Section 3.5 below. It is unlikely, however, that suitable trade data will be available in the short term given the complexity of the task.

Nevertheless, some estimates are available on the magnitude of the problem the Convention is seeking to address. For instance, the Secretariat of the Basel Convention estimates the global total of hazardous wastes generated to be over 400mt per annum (SBC 1997*b* p.1).

Acknowledging the general lack of knowledge and reliable data in this field, and the consequent impediments for effective policy formulation and monitoring, the OECD Council decided that Member countries would co-operate in the collection of harmonised data on waste imports and exports and to make these data publicly available. Information is reported by OECD countries to the Waste Management Policy Group. Data now exists for 1989 to 1993. Despite the establishment of the International Waste Identification Code by OECD, there remain inconsistencies and discrepancies in data between countries, principally as a result of differences in the definition of hazardous waste which still exist from country to country. As noted by OECD (1997 p.8):

> *"Other difficulties lie in the differences of approaches and scope between national regulations. A number of countries do not control wastes destined for recovery operations; others do. Some countries only control the exports of hazardous wastes at the national level and rely on domestic regulations to ensure proper control of the imports; exact and comparable import data is therefore more difficult to obtain. Furthermore, data provided by some countries refers to the total authorisations granted for exports or imports, and not necessarily to the actual amount of wastes moved during a particular year."*

The OECD statistics focus predominantly on exports and imports, although quantities of hazardous wastes generated are also provided for some years, differing by reporting country. Published figures provide aggregate information also on the type of disposal or recovery operation for which the hazardous waste movements are destined. Annex Table 2 reproduces the summary of transfrontier movements of hazardous wastes for each OECD country from 1989 to 1993. Given the definitional variations described above, the aggregated totals across countries, and comparisons between countries, are not more than approximate, and great caution needs to be exercised in using them.

Annex Table 3 shows the shares of exported and imported hazardous wastes compared to national generation for 1991 to 1993. Summing different base years, the estimate of total generation of hazardous wastes was 323 million tonnes. In OECD countries the average share of exports of hazardous wastes compared to national generation was around 4 per cent in 1993, and seems to be decreasing (compared with around 6 per cent in 1991). Conversely, average imports relative to generation have been increasing, from 2-3 per cent in 1989-90, to nearly 7 per cent in 1993[4].

Calculations based on this data show that as a very rough estimate, for OECD countries with a relatively strong chemical sector, about 120kg of hazardous wastes are generated per capita. For other OECD countries, about 50kg of hazardous wastes are generated per capita.

Annex Table 4 shows the share of exports of hazardous wastes destined for final disposal or recovery for OECD countries in 1993. According to the average (based on 14 countries), 42 per cent of waste exports of OECD countries were destined for final disposal, and 58 per cent for recovery. Annex Table 5 shows the breakdown of exports of hazardous wastes by final disposal operation and by final recovery operation in 1993. In terms of quantities, the largest tonnage goes to incineration on land, followed by recycling/reclamation of metals and metal compounds.

The proportion of hazardous wastes generated in industrialised countries which crosses an international border is thus low -- around 5-10 per cent. Of this, the majority of movements are from one industrialised country to another.[5]

2.2 National policy developments

Whatever the actual size of transboundary movements, developments in national waste management policy in OECD countries over the last decade or so have spurred the creation of an international legal regime for controlling hazardous waste movements. As awareness increased in OECD countries of the health and ecological effects of improper management of hazardous wastes, regulations on handling and disposal were made more stringent. Also, landfill capacity has been declining in many OECD countries as unsafe sites have been closed, and great resistance to new disposal sites (dumps, incinerators, etc.) has emerged. Quantities of hazardous wastes generated however have not similarly declined.

Charges for waste disposal have also increased substantially in the OECD. The growing divergence between the regulatory standards and charges in OECD countries compared to most developing countries of itself creates an economic incentive in favour of disposal and recovery operations taking place in lower cost destinations. Within the OECD, waste disposal and recovery charges, and technical facilities, also vary significantly, driving intra-OECD trade in hazardous wastes. Thus hazardous waste management has become increasingly a globalised business, requiring global regulatory systems in light of the potential environmental effects of improper practices.

Notwithstanding the globalisation of the waste management business, some waste management policy including the Basel Convention is based on the proximity principle. The Secretariat of the Basel Convention has described this principle as one "by which the disposal of hazardous wastes must take place as close as possible to their point of generation, recognising that economically and environmentally sound management of some wastes will be achieved at specialised facilities located at greater distances from the point of generation" (SBC 1997*b* p.12).

Regulating transboundary movements, while the main focus of this paper, is only part of a broader waste management policy context which seeks to reduce waste generation and de-link industrial activity from environmental damage. Regulations and charges in OECD countries on waste management have in part been designed to create an economic incentive to reduce waste at the source and to recycle wastes. By raising the costs of disposing of wastes, firms face an incentive to produce less wastes, or produce wastes that are less hazardous to handle, through cleaner production processes for example. The same logic can be extended to restrictions on transfrontier waste movements: restricting access to one more of the alternative disposal options increases the pressure for waste generation in industrialised countries to be minimised at its source.

As well as reinforcing the economic incentives for waste minimisation, international regulations were also found to be necessary to complement the emerging national systems for monitoring and managing hazardous wastes. In the beginning of the 1980's, many OECD countries were adopting national regulatory measures to enable hazardous wastes to be monitored or tracked from the place of generation to the place of disposal. It became clear however that such national monitoring systems were inadequate as too little information was available about imported wastes to exercise proper control over all sources (OECD, 1993*a*, p.12).

2.3 International policy developments

In response to the need for improved international co-ordination on hazardous waste management, OECD's Waste Management Policy Group proposed in 1982 that guidelines be developed for the export and import of hazardous wastes. In 1984, the OECD Council decided that Member Countries would control the transfrontier movements of hazardous wastes and ensure that adequate and timely information was provided concerning such movements[6]. A comprehensive set of guiding principles was therefore developed.

Similarly, following recommendations of the 1981 Montevideo Meeting of Senior Government Officials Expert in Environmental Law, UNEP initiated work on guidelines for the environmentally sound management of hazardous wastes. The work was completed in 1985 and the resulting Cairo Guidelines were adopted in 1987 by the UNEP Governing Council.

In OECD, Decisions were adopted creating legally binding obligations on OECD Member countries, with respect to exports of hazardous wastes to non-Member countries, to obtain consent of the importing country, to be satisfied that disposal facilities are adequate, and to provide information on the hazardous wastes being shipped[7]. Standard forms were developed for notification, consent and shipment of hazardous wastes. Agreed definitions of which wastes would be subject to these requirements were developed. Thus many of the obligations contained in the Basel Convention apply to OECD countries by virtue of OECD Decisions.

OECD then proceeded to develop a draft international agreement, which was presented to the OECD Environment Committee in December 1988. Meanwhile, UNEP had been instructed to develop a global convention concerning the control of transboundary movements of hazardous wastes, on the basis of OECD work. The OECD draft international agreement was therefore extended and amplified to the global level. This resulted in the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, adopted unanimously on 22 March 1989 by the 116 States participating in the Conference of Plenipotentiaries convened by UNEP. The Final Act of the Basel Conference was signed by 105 States and the European Economic Community. It entered into force on 5 May 1992, and as of February 1998, 117 States and the European Economic Community had become

Parties to the Basel Convention (see Annex Table 1). The Convention thus reflects the views of most of the world community.

Developments in the 1990s at the OECD level have led to differentiation of requirements for wastes destined for recovery and those destined for disposal. In January 1991, Decision-Recommendation Concerning the Reduction of Transfrontier Movements of Wastes [C(90)178/FINAL] called for delineation of controls as may be appropriate for the transfrontier movements of wastes destined for recovery operations, and characterisation of those wastes which may require different levels of control. The Decision says that wastes not destined for recovery operations should, to the extent possible, and consistent with environmentally sound and efficient management practices, be disposed of in the country in which they were generated. It also states that Member countries should develop disposal capacity for wastes which currently cannot be managed within their own territory.

Now referred to as the "OECD Control System", the 1992 OECD Council Decision [C(92)39/Final], Concerning the Control of Transfrontier Movements of Wastes Destined for Recovery Operations, in conjunction with previous Decisions, establishes a comprehensive regime to control transboundary movements of wastes destined for recovery operations within the OECD area. This OECD Control System identifies wastes destined for recovery operations; it classes these wastes in Green, Amber or Red lists, depending on their overall environmental risk and their management practices; and it establishes different levels of control for each list. Those wastes on the green list are subject only to controls normally applied in commercial transactions. Amber list hazardous wastes are subject to notification and consent (which may be tacit) procedures, whereas red list hazardous wastes are subject to notification and written consent controls virtually equivalent to the Basel Convention (see next section).

It should be noted that the OECD Council Decision on the movement of hazardous recyclables was negotiated with the express intention of preserving the ability to continue the transboundary movement of these waste recyclables among OECD countries. In this regard, the commercial value of the continued use of these materials by OECD industries was recognised.

A broader political factor underpinning the development of the various international regimes, including the Basel Convention, which now regulate international movements is what may be called the North/South perspective. While some countries already exercised their sovereign right to prohibit the import of hazardous or other waste, there was a strong belief in many developing countries, particularly African countries, their NGOs and some international NGOs, that a total ban on transboundary hazardous waste movements world-wide (particularly North /South movements) was necessary to deal with the issue comprehensively.

Reasons for this view included the inability of developing countries to monitor and enforce effectively their own import restriction policies, in terms of technical expertise at the customs level, legal regimes and other factors. Furthermore, there was a strong ethical view that the South should not be the "dumping ground" for the North[8]. This argument also carried symbolic weight, and assumed political importance additional to the waste trade issue *per se*. The strong push by many developing countries and environmental groups for a total global ban on hazardous and other waste movements from the countries primarily responsible for their generation has been an important factor behind the evolution of international policy in this area.

Regional agreements have also been developed where neighbouring states wish to adopt a common policy with respect to hazardous waste movements. The Bamako Convention (entered into force on 20 March 1996) was negotiated under the auspices of the Organisation of African Unity in response to dissatisfaction of African States with the absence of a total ban on hazardous waste movements in the

Basel Convention. It prohibits the import of hazardous and radioactive wastes into Africa from non-contracting parties for whatever purpose, and subjects intra-African movements to a regulatory system closely resembling the Basel Convention procedures.

The 1992 Central American Regional Agreement on the Transboundary Movement of Hazardous Wastes obliges parties to prohibit the import of hazardous wastes into the Central American region from states not party to the Agreement. Members of the South Pacific Forum concluded the Waigani Treaty on Hazardous and Toxic Wastes in April 1995 which controls the movement of wastes generated within member states and bans imports to Forum Island Countries of hazardous and toxic wastes originating in other countries.

Article 39 of the Fourth Lomé Convention concluded in 1989 between the European Union and the 69 African, Caribbean and Pacific (ACP) States requires the EU to ban exports of hazardous wastes to the ACP states. It also requires the ACP States to prohibit imports from the EU or any other State, except for the return of processed wastes that were sent to the EU for processing from an ACP State.

Chapter 20 of *Agenda 21* is devoted to management of hazardous wastes. Environmentally sound management of hazardous wastes is clearly a broader issue than simply controlling transboundary movement, as fully recognised in *Agenda 21*, the Basel Convention and the OECD Decisions. Promoting clean production technology has a key role because of its potential to reduce both the quantities and the hazardousness of industrial wastes generated.

The range of actions taken internationally over the last decade to control transboundary movements of hazardous wastes demonstrates the widespread concern and desire to exert control over a source of threat to human health and the environment. The fact that the Basel Convention operates in conjunction with these other regional agreements means it is very difficult to isolate its effects from the wider policy context.

3. Main provisions of the Basel Convention

The overall objective of the Basel Convention can be summarised as being "to protect, by strict control, human health and the environment against the adverse effects which may result from the generation and management of hazardous wastes and other wastes" (preamble to the Convention). In pursuance of this objective, four main goals can be identified (Rummel-Bulska 1996*b*, p.21):

- reduce the generation of hazardous wastes
- promote environmentally sound management of hazardous wastes
- control and reduce to a minimum transboundary movements of hazardous wastes by promoting treatment and disposal as near as possible to the source of generation
- prevent illegal movements of hazardous wastes.

Parties are required to take appropriate measures to implement these and other "General Obligations" [9]. In particular, Parties shall take the appropriate measures to ensure that the transboundary movement of hazardous wastes only be allowed under certain conditions, including the unavailability of suitable disposal facilities (to dispose of the wastes in an environmentally sound and efficient manner) in the country of generation and the need for wastes as a raw material for recycling or recovery operations in the State of import (Article 4.9).

The core of the Convention is the notification and consent procedures laid down as the regulatory system controlling movements of hazardous and other wastes covered by the Convention, among Parties. Other trade provisions regulate waste movements under certain circumstances and are categorised here as export and import measures. The term "trade" in this paper is used synonymously with "transboundary movement"[10]. "Other" wastes in the context of the Convention means wastes collected from households and residues arising from their incineration.

3.1 Notification and consent procedure

The State of export shall not allow a transboundary movement of hazardous and other wastes to commence until it has the written consent, based on prior detailed information of the State of import, as well as any State of transit (Article 6).

The Convention provides for an elaborate control system which is based on the principle of prior informed consent, namely the State of export has the duty to inform the competent authority of the State of import of any intended transboundary movement of hazardous wastes or other wastes[11]. The State of export can provide this information itself or require the generator or exporter to do so. The information provided must be sufficiently detailed to enable the authorities of the State of import to assess the nature and the risks of the intended movement.

The State of import must respond to the notifier in writing, consenting to the movement with or without conditions, denying permission for the movement or requesting further information. The State of export may not allow the movement to commence until written consent has been given and confirmation of the existence of a contract between the exporter and the disposer, specifying the environmentally sound management of the wastes in question, has been received.

A transboundary movement of hazardous wastes or other wastes can take place through one or more States other than the State where the wastes are to be disposed, subject to prior consent from the State(s) of transit. The Convention also specifies modification of the procedure in cases where the wastes in question are not considered to be hazardous by all the States involved in the movement. The principle is that every State which considers the wastes to be hazardous takes on the obligations pertaining to its position in the transaction, even if other States concerned do not define the wastes as hazardous (Article 6.5).

3.2 Import-related provisions

(a) ***The Convention fully recognises that any State has the sovereign right to ban the entry or disposal of foreign hazardous wastes and other wastes in its territory. Parties exercising this right shall inform the other Parties of their decision (Article 4.1(a)).***

As noted above, some countries had already implemented prohibitions on the imports of hazardous or other wastes prior to the Basel Convention. The Secretariat of the Basel Convention estimates that at least 50 countries have significant restrictions on the importation of hazardous waste. While in principle import bans would be sufficient to stop imports, some developing countries have wanted complementary export restrictions put in place in industrialised countries as well, due to difficulties of implementing and enforcing import controls in their own territories.

(b) ***The import of hazardous wastes from non-Parties is prohibited (Article 4.5), unless it is subject to bilateral, multilateral or regional agreement or arrangement, the provisions of which are no less stringent than those of the Basel Convention (Article 11).***

Article 11 agreements concluded after the Basel Convention should "not derogate from the environmentally sound management of hazardous wastes and other wastes as required by this Convention", whereas agreements predating the entry into force of the Convention should be "compatible with the environmentally sound management of hazardous wastes and other wastes as required by this Convention". It should be noted that the terms 'derogate from' and 'compatible with' have not been defined.

The OECD Control System on trade in hazardous wastes destined for recovery operations applies as between OECD member countries and is an agreement under Article 11 of the Basel Convention. Trade in hazardous wastes destined for recovery operations between OECD members, even where one party is not a Party to the Basel Convention, is therefore not affected by the ban on trade with non-Parties.

(c) ***Parties shall take the appropriate measures to prevent the import of hazardous wastes and other wastes if they have reason to believe that the wastes in question will not be managed in an environmentally sound manner (Article 4.2(g))***

The Convention defines "environmentally sound management of hazardous wastes and other wastes" as "taking all practical steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes". Technical guidelines on what constitutes environmentally sound practices for specific operations have been developed by the Convention Secretariat. However, it is unclear how Basel Parties themselves are defining and implementing the concept of 'environmentally sound management' in their national laws and regulations[12].

(d) ***Packaging, labelling and transport requirements***

Article 4.7 places the obligation on Parties to require that hazardous wastes or other wastes to be moved across international boundaries are in compliance with international rules and standards on packaging, labelling and transportation. Parties are also responsible for ensuring each shipment is accompanied by a movement document from the beginning of the movement to the point of disposal. The Secretariat of the Basel Convention has issued standard formats for the Notification and Movement Document, which are very similar to the OECD standard form.

3.3 Export-related provisions

(a) ***Parties shall prohibit or shall not permit the export of hazardous wastes and other wastes to the Parties which have prohibited the import of such wastes, when notified (Article 4.1(b)).***

(b) ***The export of hazardous waste to non-Parties is prohibited (Article 4.5), unless it is subject to bilateral, multilateral or regional agreement or arrangement, the provisions of which are no less stringent than those of the Basel Convention (Article 11).***

(c) ***The Parties agree not to allow the export of hazardous wastes or other wastes for disposal within the area south of 60 degrees South latitude, whether or not such wastes are subject to transboundary movement (Article 4.6).***

(d) ***Each Party shall require that hazardous waste exports are managed in an environmentally sound manner in the state of import or elsewhere (Article 4.8). This obligation may not under any circumstances be transferred to the States of import or transit (Article 4.10).***

Exporting countries therefore also have the obligation of assessing environmentally sound management in importing countries. In practice, this can be very challenging.

(e) ***The amendment decision pertaining to a ban on "Annex VII" to "non-Annex VII" exports of hazardous wastes.***

Prior to and during the negotiation of the Basel Convention there were strong pressures to adopt comprehensive and absolute restrictions on transboundary movements of hazardous wastes. The prior informed consent procedures represented a compromise solution. The pressure for stronger restrictions is evident in the text of the original Convention itself, which states that the Conference of the Parties "shall undertake three years after the entry into force of this Convention ...an evaluation of its effectiveness and, if deemed necessary, to consider the adoption of a complete or partial ban of transboundary movement of hazardous wastes and other wastes in light of the latest scientific, environmental, technical and economic information" (Article 15, paragraph 7).

The first meeting of the Conference of the Parties took place in Uruguay at the end of 1992. There was a heated debate over a proposal from the G-77 countries for a total export ban to non-OECD States, which culminated in the adoption of Decision I/22. This Decision "requests the industrialised countries to prohibit transboundary movements of hazardous wastes and other wastes for disposal to developing countries" while noting that, pending the report of the Technical Working Group, transboundary movements of wastes destined for recovery and recycling operations would continue in accordance with the provisions of the Convention.

The second COP held in Geneva in 1994 continued this line of development and adopted Decision II/12. The Conference "decide(d) to prohibit immediately all transboundary movements of hazardous wastes which are destined for final disposal from OECD to non-OECD States"; and "decide(d) also to phase out by 31 December 1997, and prohibit as of that date, all transboundary movements of hazardous wastes which are destined for recycling or recovery operations from OECD to non-OECD States" (emphasis added).

Box 1. Decision III/1 Amendment to the Basel Convention

The Conference

Recalling that at the first meeting of the Conference of the Parties to the Basel Convention, a request was made for the prohibition of hazardous waste shipments from industrialised countries to developing countries;

Recalling decision II/12 of the Conference;

Noting that:

- the Technical Working Group is instructed by this Conference to continue its work on hazard characterization of wastes subject to the Basel Convention (decision III/12);

- the Technical Working Group has already commenced its work on the development of lists of wastes which are hazardous and wastes which are not subject to the Convention;

- those lists (document UNEP/CHW.3/Inf.4) already offer useful guidance but are not yet complete or fully accepted;

- the Technical Working Group will develop technical guidelines to assist any Party or State that has sovereign right to conclude agreements or arrangements including those under Article 11 concerning the transboundary movement of hazardous wastes.

1. *Instructs* the Technical Working Group to give full priority to completing the work on hazard characterization and the development of lists and technical guidelines in order to submit them for approval to the fourth meeting of the Conference of the Parties;

2. *Decides* that the Conference of the Parties shall make a decision on a list(s) at its fourth meeting;

3. *Decides* to adopt the following amendment to the Convention:

"Insert new preambular paragraph 7 bis:

Recognizing that transboundary movements of hazardous wastes, especially to developing countries, have a high risk of not constituting an environmentally sound management of hazardous wastes as required by this Convention.

Insert new Article 4A:

1. Each Party listed in Annex VII shall prohibit all transboundary movements of hazardous wastes which are destined for operations according to Annex IV A, to States not listed in Annex VII.

2. Each Party listed in Annex VII shall phase out by 31 December 1997, and prohibit as of that date, all transboundary movements of hazardous wastes under Article 1(i)(a) of the Convention which are destined for operations according to Annex IV B to States not listed in Annex VII. Such transboundary movement shall not be prohibited unless the wastes in question are characterised as hazardous under the Convention.

Annex VII

Parties and other States which are members of OECD, EC, Liechtenstein.

While the political intent of this Decision is clear, its legal status was less so. As part of the process toward making these commitments legally binding, proponents were successful at COP III in Geneva in 1995, on the basis of a Norwegian proposal, in having Decision III/1 adopted by consensus. This Decision, reproduced in Box 1 above, contains an amendment to the Basel Convention which incorporates the essence of Decision II/12 into the Convention on the basis of a negotiated compromise text. If and when it comes into force, the amendment would insert in the Convention a new Article 4A(2) which would:

(a) prohibit all transboundary movements of hazardous wastes destined for final disposal to states not listed in Annex VII, and

(b) prohibit as of 1 January 1998 all transboundary movements of wastes characterised as hazardous under the Convention destined for recovery operations, to non-Annex VII states.

The amendment will enter into force 90 days after being ratified by 63 of the 82 Contracting Parties present at COP III. As of February 1998, Finland, Sweden, Spain, Norway, UK, Denmark, Luxembourg and the European Community had ratified the amendment.

Decision III/1 differs to Decision II/12 in that "OECD" has been replaced as the defining geographic entity by "countries listed in Annex VII", which currently consists of "members of OECD, EC and Liechtenstein", and that with regard to movements of hazardous wastes destined for recycling the scope of the export ban is restricted to "hazardous wastes under Article 1(i)(a) of the Convention. Because Decision III/1 does not address amendments to Annex VII, this matter is regulated by Articles 17 and 18 of the Basel Convention. In order to regulate the use of these Articles for the purpose of amendments to Annex VII, in future the Conference of the Parties may decide on a procedure and/or criteria. If and how this will be decided is still under debate.

While the amendment itself will not enter into force until ratified by three quarters of the Parties, the European Community has already amended its regulation No 259/93 on the supervision and control of shipments of waste within, into and out of the European Union so as to implement the amendment ban. Some other OECD countries have however stated their intention to await the outcome of further work in the Technical Working Group on clarifying the definitions of hazardous wastes which are to be covered by the amendment before ratifying or implementing it[13].

As noted above, the new Annex VII creates a mechanism for Parties potentially to be grouped among those countries to which export of hazardous wastes, from the most industrialised countries, is not prohibited by the amendment. There could therefore be some flexibility for importing countries. An important question which has not yet been resolved is whether or not criteria should be established for allowing Parties to be listed as Annex VII Parties (short of becoming an OECD member country). Some have argued that establishing criteria for Annex VII listing may facilitate the amendment decision coming into force since non-Annex VII countries may find it easier to agree with the amendment if they have the possibility of acceding to Annex VII. While becoming an Annex VII country would allow a Party to receive imports of hazardous wastes from other Annex VII countries, another consequence would be that it would then be prohibited from exporting hazardous wastes covered by the amendment to non-Annex VII Parties, if it ratified the ban amendment. This issue of criteria for Annex VII will likely be addressed at COP IV, since Monaco, Israel and Slovenia have requested addition to Annex VII.

Apart from the definitions of hazardous wastes covered by the ban amendment, another important aspect which is yet to be clarified is whether Parties to the amendment are permitted under the Convention to conclude bilateral or regional agreements permitting exports in certain circumstances between Annex VII and non-Annex VII countries. Article 11 of the Convention provides for trade in hazardous waste to be governed by bilateral, regional or multilateral agreements rather than the Basel Convention provided that such agreements provide similar standards for environmentally sound management as does the Convention. This applies for trade among Parties and with non-Parties, notwithstanding the Party/non-Party trade ban contained in Article 4.5. So how are the proposed export bans envisaged by the amendment intended to relate to Article 11 agreements?

Different views are held on this point. Reference is made in the preamble of the amendment to developing "technical guidelines to assist any party or state that has sovereign right wishing to conclude agreements or arrangements including those under Article 11 concerning the transboundary movement of hazardous wastes." It does not however explicitly refer to the use of such agreements in situations covered by the ban amendment. Australia, for example, has stated its view that Decision III/1 does not remove the right to enter into Article 11 agreements (SBC 1995, p.100).

On the other hand, the EU has taken the position in their implementing regulation that bilateral agreements which aim at derogating from the export ban will not be allowed after 1 January 1998. The EU has also decided that there will be a total prohibition on exports of hazardous wastes from the EU to countries not applying the relevant OECD Council Decisions. This effectively extends EU law with respect to the African, Caribbean and Pacific States to all non-OECD countries.

The ban amendment only requires Annex VII countries to institute export prohibitions on hazardous waste exports to non-Annex VII countries, and does not require the reciprocal import prohibitions. Nor does the amendment refer to or have a direct impact on the continued trade in hazardous waste among non-Annex VII countries, even though it is recognised that the environmental and health risks are equivalent, regardless of the origin of the waste material.

New Article 4A.2 (which would implement the Annex VII-non Annex VII export ban when ratified by three quarters of the Parties) restricts its scope to "hazardous wastes under Article 1.1(a) of the Convention". It also states explicitly that transboundary movement for recovery operations shall not be prohibited unless the wastes in question are characterised as hazardous under the Convention. While wastes defined as hazardous under Article 1.1(b) viz. those wastes defined in national legislation as hazardous, would therefore seem to be excluded from the coverage of the amendment ban, their exact legal status depends on the eventual legal relationship established within the Convention between the lists being enumerated in the Technical Working Group and the existing Annexes, and implementation decisions taken by Parties -- see Sections 3.5 and 3.6 below.

3.4 Non-trade measures

There are a wide range of non-trade related provisions of the Convention, and activities of the Secretariat and the Conference of the Parties, that form part of the total Basel Convention structure. The most important ones are briefly listed here.

- The Conference of the Parties has accepted **model national legislation** to assist all countries to implement national legislation in relation to the management of hazardous wastes;

- Information reporting requirements are in place to allow for a more systematic **information collection** on many aspects of hazardous waste management, including data on quantities and hazard properties of wastes generated and moved;
- A **Technical Co-operation Trust Fund to Support Developing Countries** has been established, but contributions so far have been small;
- **Technical Guidelines** on the environmentally sound management of wastes subject to the Basel Convention have been adopted. Specifically, the Second and Third Conferences of the Parties have adopted Technical Guidelines on wastes collected from households; wastes comprising or containing PCBs; waste oils from petroleum origins; previously used oils; hazardous waste from the production and use of organic solvents; incineration on land; and specifically engineered landfill;
- **Standard documentation** for notifications and movements of wastes has been developed;
- **Regional centres for training and technology transfer** are in the process of being established;
- **Legal and technical assistance** is provided by the Secretariat to Parties.

As noted by the Secretariat of the Basel Convention (SBC, 1997*b* p.23), "effective implementation of the Basel Convention and of the decisions taken by the Conference of the Parties and the achievement of the environmentally sound management of hazardous wastes rely upon developing the adequate capacity and capability at the national or regional levels and upon the active co-operation among Parties...". The Secretariat co-operates with national authorities in developing national legislation, setting up inventories of hazardous wastes, strengthening national institutions and preparing hazardous waste management plans. National and regional seminars have been held on the legal, institutional and technical implementation of the Convention in Saint Lucia, Maldives, Cuba, Sri Lanka, Mauritius, Brazil, Haiti, Seychelles and Ecuador (SBC 1997*b* p.23). Capacity building and technical assistance efforts however have been seriously constrained by very limited staff and financial resources.

The regional centres for training and technology transfer have a potentially vital role to play in dealing directly with the fundamental problems of lack of expertise and technology in hazardous waste management in developing countries. The Centres are aimed primarily at strengthening the capacity of Governments to comply with the technical, legal and institutional requirements of the Convention. Locations for regional co-ordinating centres and sub-regional centres were selected at COP III. Uruguay will be the co-ordinating centre for Latin America and the Caribbean with Argentina, El Salvador and Trinidad and Tobago as hosts for sub-regional centres. For Africa, Nigeria will be the co-ordinating centre. Egypt, South Africa and a yet to be selected State in West Africa will host sub-regional centres. In Central and Eastern Europe, a central co-ordinating centre has not yet been located. However sub-regional centres will be located in Slovakia, the Russian Federation, and possibly Estonia. One regional centre for Asia and the Pacific has begun operation in China, and one in Indonesia is being established (SBC 1997*b* p. 21 and Campbell, 1997, p.36)

The effective establishment of these centres hinges on voluntary contributions of funding and qualified personnel. So far, resources devoted to training and to the centres in particular, have been minimal. For example, the total Budget of the "Technical Co-operation Trust Fund to Assist Developing Countries for 1997-98" was around $1.5m per year (SBC 1995, p.36). Of that, the training centres were allocated $200 000 and $400 000 respectively for 1997 and 1998. One regional/sub-regional workshop or seminar was foreseen per region per year, with funding of around $150 000 per year. Technical assistance to 10 countries is foreseen with a budget of $250 000 and $270 000 for the respective years. Almost half of this fund is allocated to contributing to the costs of Parties' participation in the meetings and Conferences of the Convention.

While the amount of technical and financial assistance has been low at the multilateral level, it should be recalled that bilateral technical assistance is also provided in pursuit of the objectives of the Convention, but not necessarily through the Convention Secretariat.

3.5 Definition of "wastes" and "hazardous wastes"

One of the biggest difficulties for the effective functioning of the Basel Convention's regulatory regime is the core question of defining precisely which materials it covers. The Convention in effect lays out a classification mechanism, rather than specifying precisely which materials in which forms are hazardous wastes. The definitional system enumerates sources of wastes which are covered unless they do not possess any of the listed hazard characteristics. In practical terms this means it can be difficult for those operating the Basel provisions to know when they are dealing with a material to which the Convention applies. The difficulty is most acute in countries lacking a sophisticated testing and technical infrastructure.

The Convention defines "wastes" as substances or objects which are (or will be or must by law be) disposed of. The distinction between products and wastes is a very complex and controversial threshold question. By their nature, many materials which, while being wastes, and while they may be hazardous in some sense, are also sources of "secondary" raw materials. Different approaches to this question of differentiating between wastes and products can cause confusion in international trade. In response to this problem, the OECD Waste Management Policy Group is developing a guidance document for distinguishing waste from non-waste (in the context of the OECD Council Decision on the Control of Transfrontier Movements of Waste Destined for Recovery Operations, not the Basel Convention as such).

Under Article 1.1(a) of the Convention, hazardous wastes are those which belong to any category listed in its Annex I, unless they do not possess any of the hazard characteristics listed in its Annex III. Annex I lists 18 categories of wastes in terms of their source--e.g. waste streams such as wastes from production of inks and paints, (listed in Annex Table 6 to this paper) and a list of 27 constituents, which, if a waste contains one or more, renders it a hazardous waste -- e.g. arsenic, mercury (Annex Table 7 to this paper). Hazard characteristics which combine with a listed material to render it hazardous under the Convention include explosive, flammable, oxidising, poisonous, infectious, corrosive, toxic and ecotoxic.

Neither the hazardous constituents nor the hazard characteristics are expressed in terms of quantities, concentrations or minimum acceptable levels. This means that there is wide margin for judgement in determining whether a particular shipment is covered or not by the Convention, especially for those hazard criteria not defined internationally[14]. It also means that there is the potential for shipments of waste materials to become classified as hazardous on the basis of very small amounts of a hazardous constituent. The result is uncertainty for administrations and industry as to what wastes are covered by the Convention under what circumstances.

In addition to the Basel Annexes, any material defined in national legislation of a Party as hazardous waste is incorporated by reference into the Convention under Article 1.1(b) and is subject to control by the Convention as concerns any dealing with that Party (export, import or transit). Article 6.5 sets out slightly adapted rules governing transboundary movements where not all parties to a transaction consider the waste to be hazardous.

Radioactive wastes and wastes which derive from the normal operations of a ship are deemed to be covered by other international instruments and are therefore excluded from the scope of the Basel Convention. Likewise, Decision III/15 put substances subjected to the Montreal Protocol which are destined for reclamation and purification outside the scope of the Basel Convention.

A special category of "other wastes" is listed in Annex II as "categories of wastes requiring special consideration", and comprises wastes collected from households and residues from their incineration.

As can be seen, the Annexes which list the covered substances do not themselves address the question of the intended use of the material, whether it be for final disposal or recycling. Annex IV lists the processes that the Convention considers to constitute disposal. This Annex IV is divided into 2 categories of disposal operations. Section A lists operations which do not lead to the possibility of resource recovery, recycling, reclamation or re-use such as landfill. Section B lists operations which do lead to recovery, recycling etc., including use as a fuel. Most of the provisions of the Convention, such as the notification and consent procedure and restrictions with respect to non-Parties, apply irrespective of whether the movement is intended for final disposal or recycling.

3.6 Work of the Technical Working Group

Much of the important technical work underpinning the Convention has been carried out in Technical Working Group (TWG). Decision III/1(Amendment to the Basel Convention) instructed the TWG to give full priority to its work on hazard characterisation and the development of lists of wastes which are and those which are not subject to the amendment, in the lead-up to COP IV. This reflects the acknowledgement that the lack of sufficient definition, classification and characterisation of which materials are covered is a major impediment to implementing the Convention[15]. The need for clear definitions is made more pressing by the proposed amendment, as the consequences of a hazardous waste being covered by the amendment are now more important (i.e. subject to an export ban from Annex VII countries compared with notification and consent procedures). Industry and NGO specialists are participating in this work.

While work is still ongoing, the TWG is operating under a "list" approach that is based on, but different from, the existing red, amber green lists used in the OECD Control System. While the Lists are yet to be adopted by the Conference of the Parties, very roughly speaking, List A in the Basel Convention would be wastes subject to the amendment-induced export ban. List B would be wastes generally <u>not</u> subject to the amendment (unless possessing hazard characteristics) and only covered by the rest of the Convention if defined as hazardous in national regulatory systems. List C is a transitional working list, for wastes which have yet to be assigned to either List A or List B, and as such will have no legal basis in the Convention.

More precisely, the TWG has proposed that the wastes placed on List A would be characterised as hazardous wastes under Article 1.1(a) (i.e. for the purposes of the Convention and the amendment-induced ban), unless they do not possess any of the characteristics listed in Annex III. The wastes on List B would <u>not</u> be characterised as hazardous under Article 1.1(a) of the Convention unless they contain Annex I material to an extent causing them to exhibit an Annex III hazard characteristic. However, if a waste on List B is considered to be hazardous by the legislation of a Party of export, import or transit, it would nevertheless, based on Article 1.1(b), be subject to the control regime of the Convention. A review mechanism (and standard application form) will be proposed for adoption by COP IV whereby a Party can seek to alter the list status of a particular waste, or introduce some refinement.

List A and List B together may not encompass all of the hazardous wastes described in the Basel Convention Annexes. Therefore the legal status to be attributed to the lists within the Convention (i.e. binding/non-binding; incorporated in the text of the Convention or not?), and the relationship between the existing Annexes and the new lists are currently uncertain, and are to be discussed at COP IV in February 1998. Similarly further clarification is needed on the relationship between new Article 4A.2 implementing the Annex VII export ban, and existing Article 4.9 allowing transboundary movements of hazardous wastes if *inter alia* "(b) The wastes in question are required as a raw material for recycling or recovery industries in the state of import."

Clearly, the system will continue to be complex for business and administering authorities, not least by virtue of the fact that countries have different views and laws about "wastes" and "hazardousness", and these will still have to be respected under the Convention. The absence of multilaterally agreed definitions of the hazardous wastes covered by the Convention produces not only complexity and uncertainty, but also allows room for national definitions to be directed toward commercial benefit of domestic industry. Suspicions have arisen that the national definitions of hazardous wastes could be used to manipulate quantities and prices of certain raw materials on world markets.

Despite the fact that the definitions of several items on the draft lists still lack the clarity desired (especially by customs authorities), and that a certain number of wastes simultaneously appear on List A and List B (i.e. List B contains a more specific or a different category or form of a List A waste, given that a consensus on minimum concentration levels could not be reached), clear progress has been made in delineating those wastes that will be subject to the export ban of the Amendment. With the exception of a number of heavy-metal-containing wastes (unless in massive form), and most forms of non-massive lead waste and scrap, the quantitatively important secondary materials traded internationally were put on list B.

While not yet adopted by the Parties, the following are some of the important recyclables included on draft list B:

Precious metals (not mercury);
Metal and metal-alloy wastes in metallic, non-dispersible form;
iron and steel scrap;
copper, aluminium, nickel, zinc, tin and other specified scrap in non-dispersible form;
certain clean uncontaminated bulk metal scrap;
printed circuit boards not containing specified components such as polychlorinated biphenyls;
glass and ceramic waste in non-dispersible form;
paper and textile wastes;
many specified forms of scrap plastic; and
rubber, cork, and agro-food wastes.

Therefore it can be said that the work of the Technical Working Group looks likely to succeed in providing clearer definitions of hazardous materials subject to the amendment, and those which are not subject to the Convention (unless made so by way of national legislation)[16]. In principle this should take out the low environmental risk/high economic value materials that have caused such controversy in the wake of Decision II/12 and III/1. While the actual size of the problem from the business perspective would thus seem to have been reduced, it has not been entirely eliminated. The more general policy issues in terms of environmental and economic policy are considered in the next Section.

4. The purpose and effectiveness of the trade measures

While the trade-related provisions of the Basel Convention are set in a broader context of environmentally sound management of hazardous and other wastes, they constitute the core operational provisions of the Convention. They are the primary means by which the Convention seeks to meet its objectives. Thus the purpose and effectiveness of the trade provisions is inextricably linked to the overall environmental purposes and effectiveness of the Convention. Furthermore, it would not seem productive to attempt to assign specific purposes to each of the various trade provisions.

The concept of "effectiveness" of policy measures taken for environmental purposes has many dimensions, at least including political, legal, environmental and economic dimensions. The question of which indicators could be used to assess environmental effectiveness, or overall effectiveness in terms of costs and benefits, of the trade measures is particularly difficult in the case of the Basel Convention. It is not possible to state clearly the coverage of the Convention because of the margin for interpretation in the definitions of waste and hazardous waste; data at a waste-specific level is largely unavailable; several policy regimes operate in this area simultaneously, and the Convention is so young.

Ideally, an evaluation of overall effectiveness of the Convention would involve an estimate of the total economic, health and environmental costs and benefits arising from transboundary movements of hazardous wastes for each country, taking into account the serious risks mismanagement entails, and how that welfare cost/benefit calculus has moved over time. However the physical quantities of transboundary movements are not known, let alone the valuation of their total economic and environmental costs and benefits. Further research at the country level on specific wastes is needed to better understand the environmental and economic costs and benefits of unilateral and multilaterally-imposed trade restrictions, and how other policies can reinforce benefits and ameliorate costs[17].

The approach taken here is to focus on the effectiveness of the trade provisions in achieving the environmental objectives of the Convention. Three different perspectives are applied. The first perspective concerns changes in quantities and uses of hazardous wastes traded; the second concerns the implementation of the Convention in legal terms; and the third concerns the economic structures or signals created by the trade provisions and their relationship with the goals of the Convention.

4.1 Hazardous waste movements

After full cost/benefit analysis, the next best proxy indicator of effectiveness might be to assess whether physical transboundary movements of hazardous wastes have declined in volume over the life of the Convention. The fact that data is not generally available on even legal shipments of hazardous waste as a discrete category has been discussed previously. Moreover, quantities of materials traded would of course give no indication of hazard and environmental costs in themselves, and some movements are acknowledged to yield environmentally preferable outcomes. Without data disaggregated according to final use (recycling or disposal), to type of waste, and to destination country, it is practically impossible to assess the "environmental loading" caused by waste flows, and the effectiveness of the Basel Convention in reducing those effects.

Information on hazardous waste movements covered by the Basel Convention must be reported to the Convention Secretariat. Ideally, the secretariat would then publish them in standard format, compiled and analysed. Although the Convention requires reporting of various information including quantities of transboundary movements, so far these obligations have not been fulfilled in a way which enables data to be effectively collated. For example of the 32 Parties which provided information on

exports of hazardous wastes (as required by Article 13.3(b)(i)), only 15 used the form prepared by the Secretariat. Consequently, information given covers different time periods, different units of measurement, different definitions and categorisations of hazardous wastes, a variety of languages, and sometimes illegible print (Campbell 1997, p.64-65).

In the absence of useable data at the Basel Convention level, three different sorts of quantitative information are discussed in the remainder of this sub-section. First, OECD data is discussed, but this clearly has a limited geographical coverage and also a divergent definitional base. Secondly, data collected by Greenpeace is briefly discussed, but this information is unofficial; not susceptible to very meaningful aggregation or analysis; and includes a very wide range of wastes going way beyond the coverage of the Basel Convention. Thirdly, statistical work has been done in UNCTAD on specific categories of scrap metals and residues, which while they do not reflect hazardousness criteria, are relatively robust and comprehensive, based on officially reported data, and contain a good number of items now classified as hazardous (such as certain ashes and residues).

There is a general view in business and environmental circles that international movements for final disposal have probably declined, whereas movements for recycling have increased. This view is supported by the OECD data in Table 1 below. It presents the OECD figures on total exports within OECD, and the proportions going to disposal and recovery, over the years 1990 to 1993.

Table 1. **Exports of hazardous wastes within the OECD area**

	1990	1991	1992	1993
Total "Hazardous Waste" Exports from OECD Countries (tonnes)	1 801 108	1 941 317	1 425 962	1 396 470
Average* share going to Final Disposal (%)	53.1	51.3	49.8	41.6
Average* share going to Recovery (%)	46.9	48.7	50.2	58.4
of which:				
% of recycling/reclamation of metals and metal compounds	42.6	19.7	51.0	51.5
% used as fuel to generate energy	9.5	2.4	7.9	10.3
% of recycling of inorganic materials	7.5	61.8	12.1	8.9

Source: OECD (1993), (1994) and (1997), various tables. See Annex Table 2 for notes concerning export data.

* These averages are based only on data from those countries for which the breakdown as between final disposal and recovery is available.

As can be seen, both the total measure of exports of "hazardous wastes" (as defined by the national authorities reporting data to OECD) and the share going to final disposal have decreased over the four years for which data is available. It is not possible to distinguish the effect of the Basel Convention (which entered into force in 1992) from the effect of other control systems operating in the

OECD countries, such as the OECD System, the EU regulations and national policies which have been implemented progressively since the mid-1980s. However, to the extent a trend can be identified here, it would seem to be a downward one.

Recycling and/or reclamation of metals and metal compounds would also seem to be constituting a generally increasing share of exports of hazardous wastes destined for recovery. The dramatic difference in the 1991 composition of hazardous wastes going to recovery relative to the other years shown in the Table is possibly due to a large once-only shipment of a particular waste item which distorted the shares in that year.

The Greenpeace data for the period 1989-93 (Greenpeace 1994) reported in Annex Table 8, are compiled on a completely different basis, but also show a rise in the share of "waste trade proposals" going to recovery and recycling operations, albeit in the context of a rising number of such proposals [18]. The "rejection rate" on the part of importing countries (viz. proposals for waste trades that were rejected by the proposed importing country) is also decreasing according to these figures.

The Greenpeace database covers a very broad range of wastes, including for example plastics that are not classified as hazardous in national or international law. The coverage of the database is therefore not akin to the Basel Convention coverage. The data have not been verified by governments or official organisations. Both legal and known illegal proposals are included. The number of "proposals" refers to the number of contracts or deals made known to Greenpeace, and as such is not a measurement of total quantities or the hazardousness of these proposed movements.

These data are therefore quite difficult to interpret. In addition, the number of countries implementing a complete ban on imports of domestically-defined hazardous wastes has increased, meaning there is a much smaller group of countries to which legal proposals could even be put. The apparent decline in rejection rates could reflect this fact rather than an increase in waste trade. Also, a much higher proportion of shipments are said to be for recycling than before (30 per cent in 1980-1988; 90 per cent for 1993). This is thought by some commentators to reflect in part fraudulent labelling and documentation disguising disposal operations -- so-called "sham recycling" -- adding to pressure for stricter controls on waste movements for recovery to close the loophole. Another possibility is that the increase in information generated by the Basel Convention procedures may have enabled more informed decisions to be taken on accepting waste trade proposals, rather than outright rejection.

Trade in metal scrap and residues

The ambiguity in the definitional system in use under the Convention, the different national definitions of hazardous wastes, and the general lack of disaggregated trade data, all contribute to the difficulties of estimating the volume or value of total hazardous waste trade which will be subject to the amendment. However in the case of metals, some estimates have been produced of the magnitude of trade flows that could potentially be affected. This information serves more as a baseline against which the effects of future actions taken under the Basel Convention can be measured, rather than evidence of trade effects or environmental effectiveness, so far.

Beginning with a far-reaching hypothetical impact of the Convention, one study (Cox and Sheales 1996) has reported that there is a fear in some industry circles that some mineral concentrates could become "caught" by the proposed amendment prohibiting Annex VII to non-Annex VII exports of waste metals destined for recycling. Trade in copper, lead and zinc concentrates from OECD countries to non-OECD countries was valued at US $449m in 1994. Australia, Canada, Mexico and the US are major

exporters of these concentrates, which have not been treated as hazardous wastes to date. However, the study warns that :

> *"... the transboundary movement of mineral concentrates or other intermediate or final products could be regulated in the future under the Basel Convention. Although such a possibility seems remote at present, it could happen, for example, if mineral concentrates were shown to contain quantities of hazardous materials (as identified under the Basel Convention) similar to those of recyclable waste subject to the ban. There is no clear distinction in the Basel Convention between mineral concentrates which are by-products or co-products of the mining and processing of ores, and the wastes emanating from such activities."*
> (Cox and Sheales, 1996, p.9)

Given the work done so far, and continuing, on providing clearer definitions of the hazardous wastes covered by the amendment, these types of concerns should be on the decline.

Less hypothetical is the impact on some forms of scrap metal wastes -- while remembering that the majority of traded secondary materials will be excluded from the scope of the proposed Annex VII to non-Annex VII export ban. Without attempting to distinguish between "hazardous" and "non-hazardous" materials, preliminary estimates were made for international trade in metal scrap and residues by UNCTAD (1995). In 1990-1993, on average OECD exports of scrap metal and residues amounted to some $US6-7 billion annually at constant 1985 prices. Two thirds of this amount was traded among OECD countries. Of the remaining third, some 90 per cent was shipped to Asian developing countries, in particular China, India, Indonesia, Malaysia and Thailand.

Also noteworthy in this study is the dramatic growth of OECD to non-OECD trade in metal scrap and residues. The share of OECD exports of metal scrap and residues going to "developing" countries rose from 5 per cent in 1980, to 29 per cent in 1993. Practically all of this growth is due to Asia. Growing even faster as a share of total world trade, South-South trade increased its share of total world exports of metal scrap and residues from 0.4 in 1989 to 6 per cent in 1993. This South-South trade involved primarily the same limited number of countries as import from OECD countries.

Box 2: Statistical Analysis of Certain sub-Categories of Metal Scrap and Residues

In an attempt to focus more closely on those sub-categories of metal scrap and residues which might be affected by the amendment to the Basel Convention, UNCTAD did a follow-up study dealing with two such sub-categories (Hoffman, 1996). The two sub-categories treated are firstly, slag, dross and scalings from the manufacture of iron and steel, and ash and residues containing non-ferrous metals and metallic compounds; and secondly, scrap of non-ferrous metals and alloys. These analyses use trade data from three different trade data bases, and do not necessarily correspond with what would be defined as hazardous wastes under the Convention or national legislative systems. Nevertheless, many, or even most, metal-bearing ashes and residues are likely to appear on List A, i.e. subject to the amendment. The information is provided in volume rather than value terms, to avoid the fluctuations associated with changing world metal prices.

Slag, dross and ash covered in the review accounted for about 13 per cent of global trade in metal waste and scrap. OECD to non-OECD exports account for some 16 per cent of global slag/dross and ash shipments. In volume terms, intra-OECD trade is 67 per cent of the total; intra non-OECD about 5 per cent; and non-OECD to OECD shipments, 12 per cent of the total. Over the period 1990 to 1993/4 exports from OECD to non-OECD countries grew by 11 per cent, compared with a growth rate of 106 per cent in intra non-OECD trade, 33 per cent growth in non-OECD to OECD exports, and a fall of 20 per cent in trade within the OECD.

Moreover, the trade is highly concentrated in terms of country destinations: the countries of South and South-East Asia, the Republic of Korea (then not a member of the OECD), China and Chinese Taipei account for some 60 per cent of ferrous-bearing residues imports from OECD countries, and about 95 per cent of non-ferrous metal bearing residues imports from OECD. (Hoffmann 1996)

As for scrap of non-ferrous metals and alloys, these account for about 9 per cent of global trade in metal waste and scrap. Copper scrap makes up two thirds of the non-ferrous metal scrap traded, followed by aluminium scrap at 20 per cent in 1990-1994. Trade in lead scrap has contracted significantly as a share of the total between 1990 and 1994, from about 20 per cent of the total, to about 2-3 per cent. In terms of regional composition, OECD exports to non-OECD countries account for 63 per cent, and intra non-OECD trade accounts for 14 per cent, of world trade in non-ferrous metals and alloys scrap. The fastest growing trade flows are those among non-OECD countries, followed by shipments from OECD to non-OECD countries. (Hoffmann 1996)

4.2 Implementation of commitments

The independent consultant's evaluation of the effectiveness of the Basel Convention, prepared pursuant to Article 15 of the Convention in 1995 (UNEP 1995*a*), acknowledges the difficulties caused for evaluation by the dearth of empirical data. This evaluation also notes that the Convention has been operating only for a very short period of time, and it is too early to make an overall judgement as to its effectiveness in terms of reduced quantities of hazardous wastes generated and traded. This point applies *a fortiori* to the restrictions on Annex VII to non-Annex VII trade, which is not yet a legally binding requirement, is very recent, and not due to come into effect until, at earliest 1998 if ratified, as concerns movements destined for recovery or recycling. The approach taken by the consultant's report was instead to look at the impact which the relevant activities under the Convention have had on four main "target groups", namely the international community as a whole, the Conference of the Parties, individual State Parties; and the Secretariat of the Convention.

One of the criteria used for assessing the Convention's effectiveness was the extent to which it had been able to sensitise the international community to the problem of hazardous wastes. A yardstick for measuring this was considered to be the number of States having ratified the Convention. The report considered the then 84 ratifications as indicating success by this measure, while noting with concern the fact that the US, the largest producer and exporter of hazardous wastes, had not ratified, and that many

African countries, the main intended beneficiaries, had also not ratified. The number of Parties is now 117 States plus the EU, including 21 African countries (out of a total of around 50), but still excluding the US.

Various other aspects were considered by the consultant's report, such as implementation of the rights and obligations, and activities undertaken by working groups and the Secretariat. Particular attention was drawn to the constraints imposed by inadequate funding to the Secretariat and the trust funds for technical assistance. This approach could perhaps be described as primarily a legal approach, in that it sought to evaluate how well the Convention was being implemented (see Section 5 below).

A report in preparation for UNEP (Campbell 1997) has extended this approach to include indicators of effectiveness such as the number of parties with national implementing legislation; the number of incidents of illegal movement; and number and quality of data reports by Parties to the Secretariat.

The report notes that the information on implementing legislation presented to COP III in 1995 refers only to the situation in 1993, at which time eighteen Parties reported that national legislation or procedures had been or were in the process of being adopted. To be effective, the Convention first needs to be adequately implemented. However, implementation of the legal requirements of the Convention does not in itself indicate achievement of the environmental objectives.

Concerning illegal movements, the report suggests that a reduced volume of illegal traffic would be an indicator of effectiveness of the Convention. This approach cannot be taken very far however for two main reasons. First, of the little information on illegal traffic which actually exists is of an anecdotal nature, and secondly, the Convention has been in place for too short a time to identify any trends as more and more Parties implement the Convention. Furthermore, the range of transboundary movements which are "illegal" is increasing over time as the requirements of the Convention become stricter. It could therefore be expected that the amount of illegal transboundary movements of hazardous wastes actually increase as the Convention becomes progressively more stringent, at least pending more comprehensive enforcement procedures (Campbell, 1997, p.62).

As discussed above, the report also finds that the very low quality of data reported to the Basel Convention Secretariat prevents the use of this information as a tool to evaluate the effectiveness of the Convention (Campbell, 1997, p.63).

4.3 Environmental and economic signals

The rest of this Section looks at the economic and environmental effects of the main trade-related provisions. The approach is predominantly qualitative. The perspective taken is to ask how well the main trade-related provisions serve the environmental objectives of the Convention. The principal objectives of the Convention, as quoted from UNEP (1995) "may be summarised under two distinct but inter-related categories, namely:

(i) the control of transboundary movements of hazardous wastes with a view to their reduction; and
(ii) the promotion of the environmentally sound management of hazardous wastes".

(a) The notification and consent procedure

The Basel Convention's core is the system it established for requiring written consent, on the basis of disclosure of relevant information, prior to any legal shipment of hazardous or other wastes. The notification and consent system has clearly achieved the primary objective of controlling previously uncontrolled transboundary movements of wastes, in the sense that it has established multilateral rules that govern such movements. It is hard to say whether there has been a reduction in transboundary movements because of the prior informed consent procedures.

Has the procedure promoted the environmentally sound management of hazardous wastes? The main issue here concerns the ability of authorities to understand and make informed use of the information generated by the notification and consent procedure, and to manage the bureaucratic processes required.

The Basel system is effectively a management system, and hence requires management expertise to function effectively. If properly implemented, it should promote the environmentally sound management of hazardous wastes. If in effect no assessment is made of whether hazardous waste imports will be managed in an environmentally sound manner, then the objective will not necessarily be met. The supplementary efforts undertaken on technical guidelines and training, work towards easing these constraints, and it will be a continuous process. It would seem safe to assume however that some countries are not currently in a position to implement the prior informed consent procedure in a way that clearly ensures environmentally sound waste management in their territories.

This institutional capacity constraint was one of the reasons why many developing countries initially pushed for a total ban on hazardous waste movements. A total trade ban is administratively simpler than a permit system. A permit system obviously provides more scope for hazardous wastes to be imported than does a trade ban. Under a permit system, there is scope not only for poor quality technical decisions to be made, but also for illicit payments. While there is an argument that a total ban removes these dangers, that also depends on the State's ability to control illegal trade. The fact that the Convention is moving toward implementing a ban on the export of hazardous wastes for both disposal and recovery, from Annex VII to non-Annex VII countries, can be interpreted as evincing the Parties' belief that the prior informed consent procedures are inadequate for effectively controlling that category of trade in hazardous wastes.

(b) Import bans

It is estimated by the Secretariat of the Basel Convention that at least 50 countries have implemented substantial restrictions on the importation of hazardous wastes. Reinforced by the Convention's requirement that exporting countries shall not permit exports to countries with import bans, this measure should lead directly to the reduction of the quantity of hazardous waste movements. The degree to which this is the case in practice depends on the compliance with and enforcement of the import ban. Illegal trade could continue, and would probably be subject to lesser checks on the environmental soundness of its treatment than would legal trade. Thus there may be a trade-off between "control" and "reduction" of transboundary movements of hazardous wastes.

As the Convention recognises, there may also be a trade-off in certain circumstances, between reducing transboundary movements, and environmentally sound management, of hazardous wastes. This would be the case when environmentally sound disposal or recovery facilities are not available domestically, but are internationally. Article 4.9(a) acknowledges this by providing a specific exception for this case, viz. specifically allowing for the transboundary movement of hazardous wastes where the

State of export does not have the technical capacity and the necessary facilities to dispose of the wastes in an environmentally sound and efficient manner.

(c) The limited ban between Parties and non-Parties

The Convention requires Parties to not permit exports or imports of hazardous or other wastes from a non-Party, unless they have concluded a bilateral or regional agreement pursuant to Article 11 with provisions not less environmentally sound than the Basel Convention. In effect, the Party/non-Party trade ban operates only with respect to States with which no agreements on environmentally sound management of transboundary movements of hazardous wastes have been concluded.

It seems clear that these provisions would contribute to the objective of controlling and reducing transboundary movements of hazardous and other wastes. The encouragement of bilateral and regional agreements explicitly promotes such control, and presumably, consequent reduction.

On the premise that control mechanisms and other aspects of Basel-like agreements contribute to environmentally sound management, a prohibition on trade occurring outside such systems should further the objective of environmentally sound management. The exception would be the case where a Basel Party declined to enter into a bilateral agreement with a non-Party, and the non-Party possessed superior waste disposal capacity.

(d) Ban on exports from Annex VII to non-Annex VII countries

As described above, the evolution of the Convention has been steadily towards a prohibition on transboundary movements of wastes from "North" to "South". The decisions taken at the second and third meetings of the Conference of the Parties have already urged countries listed in Annex VII (members of OECD, EU and Liechtenstein) to ban exports of hazardous wastes destined for disposal in non-Annex VII countries. A prohibition on export of hazardous wastes for recovery will enter into force 90 days after it has been ratified by 65 Parties to the Convention. This has not yet happened. In addition to specific operational aspects such as criteria for Annex VII membership discussed above, the issues raised by these decisions include how effectively the basic geopolitical distinction made in Annex VII, and the basic approach of a movement control regime, further environmental goals particularly as concerns recyclable hazardous wastes. Those countries that have ratified the ban amendment have demonstrated their belief in its environmental effectiveness.

As concerns the objective of reducing transboundary movement of hazardous wastes, the Annex VII to non-Annex VII export ban will prohibit a particular class of movement. It does not seek to control "South-South", "North-North" or "South-North" trade. The major trade flows occur amongst OECD countries, and growth is highest for South-South trade. However, for certain hazardous wastes likely to be affected by the amendment ban such as certain ashes and residues, trade flows from OECD to non-OECD are significant and had been growing rapidly -- see Box 1 above.

It could be expected that some Annex VII/non-Annex VII exports that previously took place will be diverted to other destinations within the Annex VII countries. As there will be fewer available export destinations for Annex VII exporters, it is likely that more hazardous wastes will be disposed of or recycled in the Annex VII country of generation. This is one of the objectives of the trade measures.

Analogously, non-OECD countries will have fewer sources of imports for hazardous wastes that are used as sources for raw materials such as recovered metals, and South/South trade in such materials would be expected to increase.

Overall, much current trade is likely to be diverted rather than simply stopped because the underlying demand and supply forces will persist. It should be noted that the demand and supply forces in the case of recyclable hazardous waste are influenced by whether the wastes have positive or negative economic value. To the extent that the ban has the effect of diverting some movements to either disposal or recycling within national borders, transboundary movements will decrease as a result of this ban.

Decisions II/12 and III/1 make explicit that they are based on the presumption that movements of hazardous wastes from OECD, and subsequently from Annex VII countries, to other countries run a high risk of not constituting environmentally sound management of hazardous wastes as required by the Basel Convention. Thus the Annex VII/non-Annex VII distinction (Annex VII is currently members of OECD, EC and Liechtenstein) is used as a kind of rough proxy for countries that are able or not able, respectively, to manage hazardous wastes in an environmentally sound manner, and does not allow for circumstances of individual countries to be fully taken into account. As the newly industrialising countries of Asia and Latin America advance industrially and develop or acquire environmental technology and expertise, the distinction could be expected to become less suitable as the dividing line between environmentally sound and unsound management of hazardous wastes. Moreover, South/South movements are not likely to be more environmentally sound than North/South movements, yet they will probably be encouraged by the export ban. This underlines the importance of facilitating the acquisition of improved environmental technology and expertise in these countries.

If criteria are developed to determine the circumstances under which a Basel Party can become listed in Annex VII, then the distinction could be more closely related to the capacity to undertake environmentally sound recovery operations. Some questions would nevertheless remain on whether severing the trade links between groups of countries on the basis of their current ability to manage hazardous wastes furthers the overall goal of minimising the risk of damage to human health and the environment caused by the generation and transboundary movement of hazardous waste. Transboundary movements of hazardous waste can sometimes have associated with them technology transfer and technical assistance, which may increase the capacity of the importing country to manage hazardous wastes generated domestically in a more environmentally sound way. Outlawing the trade linkages may also hinder associated beneficial technology and know-how flows. Allowing for the future possibility of mutually beneficial and environmentally sound trade in hazardous wastes between developed and developing countries could therefore, in theory, facilitate future diffusion of relevant technology and expertise. On the other hand it might be argued that transboundary movement of hazardous waste is not itself the first best instrument for developing countries to acquire the technology, expertise and institutional infrastructure necessary for environmentally sound handling of hazardous wastes.

Furthermore, while the ability for countries to be included in Annex VII is considered by some to be an important instrument, it should be noted that it is not a panacea for resolving trade access difficulties. Participation in Annex VII, as noted earlier, has its own difficulties. While Annex VII status would allow imports of hazardous wastes from other Annex VII Parties, it prevents exports of hazardous wastes to non-Annex VII states. Related to this is the varying assessments by Parties of whether the use of bilateral or multilateral agreements for Annex VII-non-Annex VII movements of hazardous waste is consistent with the ban amendment. Finally, the questions regarding compatibility with WTO provisions would remain.

4.4 The effects on the economics of recycling

Any attempt to evaluate the environmental effectiveness of the Annex VII/non-Annex VII export ban on hazardous wastes destined for recovery needs to deal with the impact on recycling of the wastes traded. Most trade in recyclables does not concern hazardous wastes (e.g. paper). However, much of the trade in hazardous wastes for recovery is of metals from scrap, ash and residues generated by mining, metal processing and manufacturing operations (see Table 1 above). Metals obtained from these secondary sources add to the stock of metals obtained from primary sources, i.e. ores and concentrates. The OECD has estimated that of total world production, some 38 per cent of copper, 50 per cent of lead and 23 per cent of zinc production is derived from secondary sources (OECD 1995*a*, p.7). The proportion of metals derived from secondary sources is steadily increasing.

Before going into a strict economic analysis it should be noted with regard to certain ashes and residues expected to be covered by the ban, e.g. filter dust, which is a residual product of steel production currently used for the extraction of certain non-ferrous metals such as zinc, that the recycling process for such hazardous wastes, in reality often leaves a considerable waste landfill problem, as only 10-20 per cent can typically be extracted from this dust. The remaining 80-90 per cent, which often continues to contain such large amounts of environmentally hazardous substances that it must be considered as hazardous waste, will in practice be placed in landfills in the importing country.

In theoretical terms, it could be argued that the economic impact of an export ban on certain hazardous wastes from Annex VII to non-Annex VII countries is to divide the world "market" for those in two. Depending on the market structure of the primary and secondary materials sector concerned, and the regulatory system in place, different effects could be expected on the demand, supply and price of the recyclable hazardous waste in different OECD and non-OECD countries. The magnitude in practice of these effects will depend on the relative importance of the specific forms of a secondary material that are finally subject to the proposed ban, i.e. those that are on List A. As previously noted, most of the major traded sources of secondary raw materials would appear to be excluded from the export ban according to the draft lists formulated by the TWG. However, the ban amendment will apply to most industrial residues in non-massive form containing elements listed in Annex I.

It could be expected that the supply of certain recyclable hazardous wastes in non-Annex VII countries would be reduced, increasing their price. Increasing the price of the scrap or waste would tend to make the recovered or secondary materials more expensive, particularly in relation to primary sources. Demand for the material could, in some cases, be expected to be substituted away from secondary toward primary sources of these raw materials. In other cases, demand could be expected to be fairly price inelastic (e.g. used lead-acid batteries can not simply be replaced with primary lead as feedstock in battery recycling operations). In both cases, but particularly the latter, the incentive for illegal trade would be strengthened.

To the extent that the price of the waste input increased, recycling operations would therefore become less profitable and therefore less prevalent. To the extent that recycling operations generated health and environmental damages, this reduction in recycling may lead to environmental benefits in those countries, but at the same time would cause economic loss to the recycling industries.

A relative price shift as between secondary and primary materials, would be expected to lead to increased use of primary materials, the extraction and processing of which may also cause health and environmental damage (and still leave the disposal problem unresolved). Overall an increase in the price of the secondary and the primary material could therefore be expected (if the hazardous wastes subject to

the export ban represent a significant enough proportion of the overall market to exert a price effect). Alternatively, demand could be switched to more highly processed forms of secondary materials. These effects would lead to flow-on price rises and a potential competitive disadvantage for user industries in non-Annex VII countries. In the longer run, supply of recyclable hazardous wastes is likely to increase within non-OECD countries as more such wastes are generated as industrialisation continues, and as collection rates for recyclable materials increase in response to the higher market price.

Within the Annex VII (OECD "plus") countries, supply of many recyclable hazardous wastes would generally be unresponsive to the market price, as they are by-products from extraction, processing and manufacturing operations, although collection rates in some cases may be responsive to market price. With some markets closed to export, world demand for some recyclable hazardous wastes would fall and the price could be expected to fall. The price differential between secondary and primary raw materials may therefore increase, making secondary sources relatively more attractive. Recycling activity in Annex VII countries may therefore increase, particularly over the longer term. If the (fairly fixed) supply is nevertheless greater than demand for recyclable hazardous wastes within Annex VII countries, some stockpiling or disposal may occur, potentially causing its own environmental problems, if conducted in an environmentally unsound manner.

It should be recalled here that the volumes of trade in hazardous recyclable wastes that will be affected by the Annex VII/non-Annex VII trade ban will be small relative to total trade in recyclables. First, major categories of traded wastes such as paper and clean metal scrap in solid form are expected to be defined as not being subject to the Convention according to the lists developed in the Technical Working Group. Secondly, the amount of the materials defined as hazardous for Basel Convention purposes that is exported to non-Annex VII countries is a small proportion of the total trade in those materials. Thirdly, there are a limited number of non-Annex VII countries actively involved in these trade flows.

For those countries and products affected however, the interruption caused by the export ban would be expected to cause economic loss and alter the fundamental economics of those recycling and related industries. Industries in non-Annex VII (developing) countries which have been established on the basis of feedstocks imported from Annex VII (OECD) countries will be particularly affected. As noted in an Australian analysis of the implications of a ban on trade in non-ferrous metals for recycling (BIE 1995, p. 24):

> *"The relatively high costs of primary metal production and the availability of growing volumes of scrap and residues have led to the development of strong secondary metal industries in both industrialised and developing areas of the world. For developing countries, non-ferrous metals recovered from scrap and residues are valuable and cost effective alternatives to primary ores and concentrates. The capital costs of secondary metal plants are substantially lower than the capital costs of primary non-ferrous metal producing plants. Secondary metal recovery can be undertaken in large scale or small scale operations whereas primary metal production requires large scale operations. Secondary metal recovery allows developing countries to begin recovery activity at a modest level and increase the sizes of their operations as non-ferrous metal consumption increases with rises in income per person. Also, in general, secondary metal processing plants are more labor intensive than primary metal processing plants. Accordingly, it could be argue that developing countries have an advantage in non-ferrous metal recycling and recovery.*

Currently secondary metal recovery is a major source of non-ferrous metals for industry in many developing countries. For example India, the world's largest consumer of zinc ash and residues, uses almost 30 000 tonnes a year, most of it imported."

In general terms, environmentally sound recycling has a positive contribution to make to sustainable development in terms of reducing pressure on virgin materials and by avoiding environmental problems associated with disposal of the hazardous wastes. Recycling operations however can also be very damaging to health and the environment in the absence of worker protection and adequate environmental safeguards. Examples documented by Greenpeace (Puckett, 1994, p.55) include families smelting down small amounts of lead in cooking utensils for extra cash, causing releases of hazardous acids, chemicals into air and water in urban areas. It is not clear whether this kind of "back-yard" or informal sector recycling uses domestic or imported feedstock primarily, and whether it would be encouraged or discouraged by the Annex VII/non-Annex VII export ban, given the rising importance of trade among non-Annex VII countries.

Recycling across national boundaries will be environmentally beneficial in certain cases, for example when there are economies of scale so that a shared facility is available for a group of countries, obviating the need for either technologically inferior processes domestically, final disposal or longer-distance shipments. In this context, increased movements of hazardous wastes could signify preferred environmental outcomes if they are shipped for environmentally superior management or instead of going to landfill. Increased transport of such recyclable hazardous wastes however poses increased risks of accidents and energy use that would add to the environmental costs of transboundary recycling.

Recycling operations, to be economically viable, must often operate above a minimum capacity to effectively achieve the required economy of scale. It is often the case that there are insufficient materials available domestically to sustain the operation of environmentally sound recycling facilities and that economies of scale can be reached through import.

In conclusion, the export ban would seem to be effective in meeting the stated objective of reducing exports of hazardous wastes from Annex VII countries to others, enforcement problems with illegal trade notwithstanding. However it can be argued that there is a problem in the overall economic and environmental impact of splitting the world market in two as concerns certain recyclable hazardous wastes which are valuable sources of secondary raw materials in some industries. Consequently it has been argued that potential perverse effects could include an increase in South/South trade, a discouragement of recycling in non-Annex VII countries, increased demand for extraction and processing of raw materials, cost increases and competitive disadvantage to user-industries in developing countries, a reduction in flows of environmentally sound recycling technology and technical assistance, and possibly enhanced backyard recycling. The broader goal of avoiding damage to health and environment may not be unambiguously well served once these ramifications are included in the calculus. Loss of business for the industries involved is another economic dimension. In the final analysis, each country weighs these factors from its own national perspective. Empirical analysis at the country level of all these factors would yield better information on which to analyse the economic and environmental impacts and overall effectiveness of the Convention.

5. Compliance

The purpose of this section is to examine the mechanisms in the Convention for ensuring compliance with its obligations. The Basel Convention does not use trade measures as sanctions for non-compliance. It relies on national law enforcement systems, and is working towards using legal liability as a key mechanism for encouraging compliance by private actors. While a formal implementation, compliance and control procedure (like the Montreal Protocol's Implementation Committee) has not yet been established under the Basel Convention, some moves are being made in that direction.

5.1 Monitoring and compliance

Monitoring of and compliance with obligations in international treaties is one of the most challenging aspects of making international law effective.

The Convention contains several provisions requiring reporting of information to the Secretariat. Each Party is required to submit an annual report providing details of each transboundary shipment of Basel-controlled wastes; disposal methods; countries of import and transit; accidents; efforts to reduce transboundary movements of hazardous and other wastes; Article 11 agreements; available information on the health and environmental effects of hazardous and other wastes; and measures taken to develop technologies to reduce or eliminate the production of controlled wastes. Parties may, under Article 19, notify the Secretariat if they suspect another Party of breaching its obligations under the Convention (although Article 19 has not yet been used). The Secretariat is in the process of establishing an integrated computerised information management system to organise and make accessible this and other information.

Problems remain however with the amount and timeliness of information reported, thus hampering compliance monitoring. Furthermore, there is no mechanism yet in place for going beyond notification to critical review of information supplied. The Consultative Sub-Group of Legal and Technical Experts was therefore requested at COP III to report to the COP IV (February 1998) on issues related to the establishment of a mechanism for monitoring implementation and compliance. A questionnaire has been circulated to gather views on whether a new specific mechanism for implementation and compliance is necessary.

5.2 Illegal trade

Article 9 deems any transboundary movement of hazardous wastes or other wastes undertaken without valid notification or consent, or resulting in disposal in contravention of the Convention, to be illegal traffic. An exporting country is required to re-import any shipment of hazardous waste that is deemed to be illegal as a result of the exporter's conduct.

Article 4.3 says the Parties consider that illegal traffic in hazardous wastes or other wastes is criminal. Consequently, Article 4.4 requires Parties to take appropriate legal, administrative and other measures to implement and enforce the provisions of the Convention, including measures to prevent and punish conduct in contravention of the Convention. Article 9.5 requires parties to introduce national legislation to prevent and punish illegal traffic.

In order to assist with compliance, the Secretariat of the Basel Convention is establishing an international reporting system for cases of illegal trade. It also provides advice and information to Parties on monitoring, preventing and punishing illegal traffic. Further, co-operation with Interpol and regional governmental and private organisations in information exchange on illegal traffic has been instituted. The Secretariat and Interpol also jointly organise training courses for police officers in the identification of illegal traffic in hazardous wastes. Work with the World Customs Organisation to incorporate Basel-controlled wastes as specific items in the Harmonised System, the classification system used by customs, will also increase the capacity of States to monitor waste movements and to ensure compliance with the Convention. The current lack of comparability between information on shipments required at the customs level, and Basel-controlled wastes, is a major impediment to effective monitoring of and compliance with the Convention.

Information on the amount of illegal trade in hazardous wastes is not available. As the legal obligations of the Convention become tighter, e.g. as the prohibitions on Annex VII to non-Annex VII trade destined for disposal and recovery are implemented, the pressures for shipments to occur illegally increase. On the other hand it can be argued that the fact that the Annex VII/non-Annex VII ban makes Annex VII countries responsible for applying their institutional and administrative infrastructure to enforce the ban on export of hazardous wastes is an important means of dealing with illegal trade.

5.3 Liability Protocol

Article 12 requires Parties to co-operate with a view to adopting, as soon as practicable, a protocol setting out rules and procedures in the field of liability and compensation for damage resulting from the transboundary movement and disposal of hazardous and other wastes.

Since 1992, an Ad Hoc Working Group has been working on a draft Protocol on Liability and Compensation for Damage. This includes the possibility of establishing a civil liability regime and a compensation fund for damage caused during the transboundary movement of hazardous and other wastes. Agreement has not been reached on the desirability of establishing a compensation fund. Priority has been given to work on the liability protocol. A partial draft text has been prepared, but several key issues remain to be resolved.

The draft calls for joint and several strict liability of either: (1) the generator, exporter or any person at the time of the incident "in [possession and/or] control" of the hazardous or other wastes, or (2) any person who at the time of the incident has operational control of the wastes. The right to seek contributions from other potentially liable persons is bracketed. The draft protocol sets a statute of limitations of 3 or 5 years depending on circumstances, but no time limitation for damage resulting from illegal traffic. No limit is placed on the extent of financial liability. Recoverable damages include loss of life and personal injury, loss or damage to property, loss of profit due to environmental impairment; impairment of environment, costs of preventative measures, and loss or damage caused by preventative measures. (Campbell 1997 pp. 43-44).

The draft protocol will be one of the important issues to be considered by the next Conference of the Parties. Further developing international law on legal liability arising from transboundary movement and disposal of hazardous and other wastes would have significant implications for both private actors and States involved in these activities. There would be an incentive for trade to be conducted legally relative to illegally, but overall there would be a significant discouragement to movements of wastes that could conceivably cause damage.

6. Relationship between the Basel Convention and the multilateral trading system

The purpose of this Section is to raise some of the issues associated with the relationship between the rights and obligations of the Basel Convention and those of the WTO. As the Convention uses various trade measures to attain its environmental objectives, the issue of the relationship with the international legal regime governing trade is an important one within the trade and environment debate. However, no attempt will be made in this paper to come to conclusions on how any hypothetical legal dispute would be argued or decided.

It should be recalled at the outset that so far there have been no cases of conflict between the obligations with respect to trade provisions in a multilateral environmental agreement and rights under the WTO which have led to formal dispute settlement in any forum, including the WTO dispute settlement system. There are clear political reasons explaining that situation, including the undesirability of calling into question a multilateral treaty signed by many national Governments. As the Basel Convention (not including the amendment) enjoys very broad membership, this signifies widespread international acceptance of the Convention and further reduces the likelihood of a conflict arising.

6.1 Membership of the Basel Convention and the WTO

In analysing the situations in which inconsistencies may arise, it is useful to distinguish between the possible classes of countries. A majority of countries are parties to both the WTO and the Basel Convention. Some countries such as the US are WTO members but not party to the Basel Convention. Some countries such as China are parties to the Basel Convention, but not WTO members. The amendment to the Basel Convention (which will enter into force 90 days after ratification by three quarters of the Parties) raises further possible categories of countries. States Party to the Basel Convention would only be legally bound by the amendment (introducing the Annex VII/non-Annex VII export ban) if they ratify it. Therefore some countries will be Party to the Basel Convention including the amendment, and some, at least transitionally, will be Party to the Convention excluding the amendment.

In cases where both countries are Party to the Convention including the amendment, and the WTO, it is quite unlikely as a practical matter that they would challenge in the WTO a measure authorised or taken in pursuance of their obligations under the Basel Convention. As Parties to the Convention and the amendment, it would be difficult, not least politically, to object to other Basel Parties implementing their obligations under the Convention.

The case where two countries are both members of the WTO but only one is a Basel Convention Party (including or excluding the amendment) is a hypothetical situation where an inconsistency may arise. In implementing the obligations of the Basel Convention, a country may find itself unable to respect certain obligations to another WTO member, not Party to the Basel Convention.

The case where two countries are WTO members and party to the Convention, but only one of them is a party to the ban amendment, is analogous to the preceding case. Under ordinary principles of international law, and as applied in Article 17 of the Basel Convention, a state is only bound by an amendment to a treaty if it accepts the amendment. Therefore a Party which has accepted the amendment may find itself unable to both implement the amendment ban and respect its WTO obligations to a fellow WTO member which has not accepted the amendment. However, in political, rather than strictly legal, terms it may be more difficult for a Basel Party to pursue any incompatability in the WTO than it would

be for a non-Party, non-acceptance of the amendment notwithstanding, given Decisions I/22 and II/12, adopted formally by consensus[19] at meetings of the Conference of the Parties.

The case where one or both countries are not WTO members is not of interest for the purposes of a discussion of the relationship with the multilateral trade rules.

6.2 Where would a dispute be heard?

The preliminary issue of where a dispute would be heard has potentially significant implications for which legal regime is applied to settle it. Parties to the Basel Convention are required to seek a peaceful resolution of any disputes that may arise either through negotiation or other peaceful means of their choice (Article 20.1). If the Parties fail to reach a resolution of a dispute informally, the Convention provides that, where Parties agree, such disputes be submitted to the International Court of Justice (ICJ) or to arbitration (Article 20.2)[20]. A dispute before the ICJ would be settled according to the rules and principles of international law.

Annex VI of the Convention covers the formation of the arbitral panel, deadlines and procedures for rendering a decision, the ability to raise counter-claims, and the ability to appeal a decision of the arbitration panel.

Within the section on Conclusions and Recommendations of the December 1996 Report of the WTO Committee on Trade and Environment WTO Members have stated their view that "if a dispute arises between WTO members, parties to an MEA, over the use of trade measures they are applying between themselves pursuant to the MEA, they should consider trying to resolve it through the dispute settlement mechanisms available under the MEA"[21].

In the event that a WTO dispute settlement procedure were initiated, the Dispute Settlement Panel would be charged with deciding the issue in the context of the GATT and the relevant WTO Agreements, using "customary rules of interpretation of public international law" where appropriate to clarify WTO provisions (Article 3(2) of the Dispute Settlement Understanding).

6.3 Some relevant WTO principles

(a) Is waste a "product" under the WTO rules?

The first question that would arise is whether hazardous or other wastes would be considered a 'product' for the purposes of the WTO rules. As noted above, the distinction between 'wastes' and 'products' or 'goods' is fundamental in defining the scope of the operation of laws relating specifically to wastes. As the WTO rules apply to 'products', it is worth considering therefore whether the waste/product distinction is relevant in the WTO context.

The WTO Agreements do not contain an agreed definition of 'product'. While the issue of defining wastes and products separately has been discussed in the Working Group on Export of Domestically Prohibited Goods and Other Hazardous Substances, no definitive answer has been reached. One commentary has argued that, while arguments can be made to the contrary, it is likely that the WTO rules on products apply to wastes covered by the Basel Convention, as they are "moveable items" placed in international commerce (Hagen and Housman, 1995, p.146-147). This reasoning is perhaps stronger

with respect to hazardous wastes destined for recycling or recovery operations than it is for those destined for final disposal.

Apart from the product/waste issue, in cases where the importer is paid to receive hazardous wastes for treatment, this is effectively the provision of a service across international borders. As such it would seem to be a service as defined in the General Agreement on Trade in Services (GATS) which defines 'service' as any service in any sector, except services supplied "...neither on a commercial basis, nor in competition with one or more service suppliers" (Hagen and Housman, 1995, p.147). The GATS would raise essentially similar legal issues as the main WTO provisions discussed hereafter, depending on the coverage of treatment of hazardous wastes in the WTO Schedules of WTO Members.

(b) Article I - General Most Favored Nation Treatment.

Article I of GATT 1994 requires that with respect to (*inter alia*) all rules and formalities in connection with importation and exportation, any advantage, favour, privilege or immunity granted by any WTO member to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other WTO members.

The question would therefore arise as to whether a country, in implementing its obligations under the Basel Convention, could find itself denying another WTO member Most Favored Nation treatment. The restriction on trade with non-Parties, and the proposed Annex VII/non-Annex export ban, could give rise to this situation.

For example, country A, a party to the Basel Convention and a member of the WTO, would be obliged to implement an export and an import ban on hazardous or other wastes to and from country B, not a party to the Basel Convention, but a WTO member. In the context of Article I of the GATT, country B could claim that country A is conferring an advantage or privilege on the product going to or coming from other countries which are party to the Basel Convention, that is being denied to a like product going to or coming from country B. The nature of the advantage would be the right to import or export the hazardous or other wastes. This "advantage" could be significant where the hazardous or other waste in question is also a secondary source of a needed raw material.

If a measure taken under the Basel Convention was considered to be inconsistent with the MFN principle, the question would then arise as to whether the trade restriction would nevertheless be justified in the WTO under a relevant exception (see discussion of Article XX below).

As a practical matter, at least as regards the Party-non Party trade ban, a bilateral or regional agreement under Article 11 of the Basel Convention which would allow such trade to be conducted (with similar controls as required in the Basel Convention), would probably be a preferred route for a country not party to the Convention to pursue. In the case of the amendment ban, the European Union and Norway have already decided to disallow the conclusion of such bilateral or regional agreements (permitting exports from Annex VII to non-Annex VII countries otherwise prohibited by the proposed amendment), whereas some countries hold the view that the Convention allows for such bilateral or regional agreements. This issue remains to be discussed by the Conference of the Parties.

(c) Article XI - General Elimination of Quantitative Restrictions

GATT Article XI states that no prohibitions or restrictions other than duties, taxes or other charges shall be applied to imported or exported products (with some exceptions not relevant here, such as agricultural products). In effect, export and import bans are prohibited.

Therefore, the question could arise as to whether the provisions in the Basel Convention that concern an export or an import ban would be consistent with GATT Article XI. It is essential that this Article, as others, be considered in conjunction with the general exceptions to the basic principles.

(d) Article XIII - Non-discriminatory Administration of Quantitative Restrictions

This Article concerns import and export licensing, prohibitions and quotas, and requires that like products coming from, or going to, all countries be treated in the same way. Would the prior informed consent procedures be considered as import and export licensing under this Article? Similar issues concerning non-discrimination could arise under this Article as arise under Article I with respect to the distinctions made between Annex VII and non-Annex VII countries, and the distinction made between Parties and non-Parties.

(e) Article XX - General Exceptions

The GATT provisions accommodate trade restrictions in the pursuit of environmental protection under certain circumstances. Article XX states (in part) that:

> *Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:*
> *...*
> *(b) necessary to protect human, animal or plant life or health;*
> *...*
> *(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption;*
> *...*

To fall under Article XX, an action taken needs to satisfy the conditions laid down in the chapeau and one of the paragraphs of Article XX. Paragraph (b) and (g) above would seem to be the most relevant with respect to the Basel Convention.

A preliminary question of approach however would arise. Given that the Basel Convention is also a reflection of the views of the international community, it is not clear how far a WTO Panel would inquire into the specific requirements of Article XX in the case of a trade measure taken under the Convention. It is possible, for example, that a (rebuttable) presumption would be made that an international consensus exists on the validity and necessity of the instruments chosen to meet a Basel Convention objective. It could also, for example, decide to solicit the views of the Convention or associated experts on the specific matters raised by Article XX.

Where appropriate, e.g. in a situation of ambiguity regarding the interpretation of a WTO provision, or regarding a WTO provision and the provision of another international agreement, the WTO dispute settlement system provides for recourse to customary rules of interpretation of public international law, including the Vienna Convention on Treaty Law. To date, the WTO dispute settlement system has made reference only to some of the rules of interpretation of the Vienna Convention in clarifying WTO provisions. Article 31(3)(c) of the Vienna Convention on the Law of Treaties provides that when interpreting a Treaty provision, one may take into account "any relevant rules of international law in the relations between the parties". Nevertheless, the role of WTO dispute settlement is to determine existing rights and obligations under the WTO Agreements.

If the text of the Convention were examined when applying the "arbitrary and unjustifiable discrimination", and the "disguised restriction on trade" tests of the chapeau of Article XX, the "necessity" test in Article XX(b), and the specific requirements of Article XX(g), the following aspects of the Convention and the amendment would seem to be relevant:

- The Convention makes it very clear that controlling and restricting transboundary movement or trade in hazardous wastes is the very purpose of the Convention.

- Of specific relevance to the amendment proposing the export ban, the preamble of the Convention recognises "the increasing desire for the prohibition of transboundary movements of hazardous wastes and their disposal in other States, especially developing countries".

- Furthermore, the amendment when ratified would insert a new paragraph in the preamble of the Convention: "recognising that transboundary movements of hazardous wastes, especially to developing countries, have a high risk of not constituting an environmentally sound management of hazardous wastes as required by this Convention".

- Article 11 agreements mitigate the trade restrictions in certain circumstances.

- Parties are free to seek enlistment in Annex VII.

In terms of the application of Article XX(b), previous WTO panels, none of which have concerned trade measures taken pursuant to multilateral environmental agreements, have not considered trade measures as "necessary" if "alternative measures either consistent or less inconsistent with the *General Agreement* were reasonably available to (a member) for achieving its aim of protecting human, animal or plant life."[22] Therefore the argument might be put that various other measures such as technology transfer would be less trade-restrictive ways of meeting the Convention's objectives than would certain trade restrictions. Some would argue however that such "positive" measures function as complements, not alternatives, to the trade measures. In this latter case the implementation of the "positive" measures in complementing the trade measures might also be assessed.

While the points raised here could be relevant, among others, in applying the necessity test and the chapeau requirements, no attempt is made here to develop further such hypothetical arguments.

7. Developing country aspects

The Basel Convention is intrinsically concerned with developing country issues. Many of these issues have been referred to throughout this paper. This section will therefore focus primarily on the differential effects of the proposed amendment on different categories of developing countries.

Circumstances in countries which may be called "developing" vary enormously with respect to their policies concerning trade in hazardous wastes. Some developing countries place top priority on protecting their populations from waste materials generated outside their borders. Other developing countries' policies are geared more to taking part in industrial activity which uses waste materials as secondary sources of raw materials, in light of the high material intensity of economic growth in these countries. The latter group basically consists of the East, South and South-East Asian countries.

This group of rapidly industrialising countries is increasingly linked to global markets, and plays a key role in the international production chains of many industries. They are becoming more wary of international actions which tend to restrict their investment, trade and technology relationships with the most industrialised countries. In this context it has been noted that views with respect to the restriction on Annex VII/non-Annex VII trade have become more diverse in recent years, with the rapidly industrialising countries having "tempered their earlier enthusiasm" (Sheehan 1996, p.7). This reflects the changing perception of the rapidly industrialising countries of their place in the world economy.

In sum, (at least) two very different types of developing countries have been treated the same way with respect to the proposed Annex VII/non-Annex VII ban. To the first group of developing countries the potential environmental benefit of the ban is that it makes Annex VII countries responsible for applying their institutional and administrative infrastructure to enforcing the ban of hazardous wastes exports to non-Annex VII countries. On the other hand, those developing countries which rely on imported scrap materials as low-cost sources of raw materials could see both the recycling industry itself, and down-stream users of the materials, suffer economic loss if those hazardous waste movements were to become prohibited. However, most of the important existing trade flows are likely to be excluded from the impact of the ban by virtue of the lists being developed in the Technical Working Group.

There are differing views over the environmental and trade implications if trade were allowed with non-Annex VII countries through Article 11 Agreements. If Article 11 Agreements were allowed, which will not be the case in the EU nor Norway, this could provide a mechanism for allowing trade to occur where the wastes in question are required as a raw material for recycling or recovery industries and if environmental safeguards were in place. Parties would also have the option of seeking listing in Annex VII in order to import hazardous wastes covered by the amendment, but this would then preclude them from exporting those hazardous wastes to non-Annex VII countries, if they ratified the ban amendment. All requests for inclusion into Annex VII would need to be considered by the Conference of the Parties in accordance with its rules for amending the Convention and its Annexes.

Depending on the eventual definitions and legal status of the lists of hazardous wastes subject to the amendment, there may be some competitiveness effects on certain industries in developing countries as a result of the Annex VII/non-Annex VII export ban. If supply shortages develop for certain secondary sources of raw materials (because they cannot be sourced from Annex VII countries), some industries which use these materials may be forced to substitute more expensive primary sources of raw materials. This could potentially reduce the competitiveness of those industries. Recycling industries themselves may also suffer from having restricted supply and/or higher prices of waste feedstocks. [23]

The large number of developing countries which have implemented substantial import restrictions on hazardous wastes demonstrates however their belief that their national interest is best served overall by limiting the amount of hazardous wastes brought into their territory, and reducing the associated health and environmental risks.

Both the availability and the degree of application of adequate management systems are essential for environmentally sound management of hazardous wastes. Efforts to improve the capacity of

developing countries to manage hazardous wastes in an environmentally sound manner would target the problem most directly, and apply equally for domestic and imported sources of hazardous wastes. While the Convention provides a framework for such capacity building, inadequate financial resources have limited the effectiveness of the non-trade measures in promoting environmentally sound management of hazardous wastes. Commercial transactions will sometimes involve some element of training and technology assistance. Reducing commercial links may also reduce these private sector knowledge and technology flows.

8. Concluding remarks

An overall assessment of the trade measures in the Basel Convention and most notably an assessment of the export ban amendment must have as its point of departure the fundamental environmental aims of the Convention. The overall objective of the Basel Convention can be summarised as being "to protect, by strict control, human health and the environment against the adverse effects which may result from the generation and management of hazardous wastes and other wastes" (preamble to the Convention). In pursuance of this objective, four main goals can be identified (Rummel-Bulska 1996*b*, p.21):

- reduce the generation of hazardous wastes
- promote environmentally sound management of hazardous wastes
- control and reduce to a minimum transboundary movements of hazardous wastes by promoting treatment and disposal as near as possible to the source of generation
- prevent illegal movements of hazardous wastes.

The Basel Convention consists of a package of trade and non-trade measures designed to fulfill these objectives. The trade provisions constitute the core of the Convention in operational terms. Overall the system has been successful in bringing international disciplines to bear on a previously laissez faire system that posed health and environmental risks. It is a widely supported Convention with 118 Parties.

A quantitative evaluation of the trade provisions in terms of their environmental effectiveness is not possible because there is not a clear-cut list of materials to which they apply, national definitions of wastes and hazardous wastes vary[24], and even based on national definitions, data is not disaggregated enough to yield information on Basel-covered movements of hazardous wastes, and data on their environmental impacts is even more elusive. Further complications arise from the fact that the Convention is so recent, and that other regimes are operating simultaneously. To the limited extent that an assessment of the data can be made, it would seem that the share of total hazardous waste exports destined for final disposal has declined in recent years.

In qualitative terms, the notification and consent procedure yields information which improves the likelihood of transboundary movements being managed properly. It creates a legal structure which facilitates disclosure of information about proposed shipments of hazardous wastes, and informed consent. The operational difficulties arising from problems in applying the broad definitional mechanism of the Convention to specific shipments have already been acknowledged by the Parties. They are to a large extent expected to be eased by adoption of the proposed lists of hazardous and non-hazardous wastes elaborated by the Technical Working Group. Another set of operational difficulties arises from problems in marshalling the required technical and administrative expertise, and in preventing illegal movements. These problems have been most acutely felt in developing countries and have constituted a basic rationale for the call upon the industrialised world to impose and enforce a general ban on the export of hazardous wastes to developing countries.

Most contentious from the economic, environmental and trade policy points of view is the proposed ban on Annex VII to non-Annex VII exports of hazardous wastes. The trade restriction should promote the stated objective of eliminating these particular movements, although it remains to be seen how the inevitable problems of enforcement and illegal trade are dealt with (in practical terms primarily by the OECD Parties). The ban amendment explicitly reflects the view that transboundary movements of hazardous wastes, especially to developing countries, have a high risk of not constituting an environmentally sound management of hazardous wastes as required by the Convention.

The main concern over the effect of the amendment-imposed ban raised by some lies in the overall economic and environmental impact of splitting the world market in two as concerns certain recyclable hazardous wastes which are sources of secondary raw materials for some industries. It has also been claimed that perverse effects may include an increase in South/South trade; increased final disposal in Annex VII countries rather than recovery; increased demand for (often energy- and pollution-intensive) extraction and processing of raw materials; increased costs to user industries in non-Annex VII countries; and, importantly, a reduction in flows of environmentally sound recycling technology and technical assistance to non-Annex VII countries. The broader goal of avoiding damage to health and environment may not be unambiguously well served once these ramifications are included in the calculus. Finally it has been argued that loss of business for the recycling industries in some developing countries, due to the fact that they can not import hazardous wastes from OECD countries, could be detrimental for sustainable development. While it is not possible to estimate the magnitude of these effects, they will be limited by the fact that according to the current draft lists drawn up by the Technical Working Group, most major trade flows of recyclable wastes will be excluded from the scope of the export ban. Further empirical analysis at the country level on all of these factors would yield better information on which to analyse the economic and environmental impacts and the overall effectiveness of the Convention in reaching its environmental aims.

It has been claimed that the geo-political distinction adopted by the Parties as the basis for the export ban amendment does not fully reflect the diversity of developing country circumstances. Some countries not currently members of OECD nor otherwise listed in Annex VII have access to environmental technologies and have the domestic institutional infrastructure to support economically viable and environmentally sound recycling operations. At present, at least three different views on how these particular developing countries should be treated have been expressed. One is that the current distinction is well-founded. Another is that one could allow Article 11 bilateral or regional agreements for these particular cases. A third view is that an effort should be made to develop agreed criteria for a dynamic membership of Annex VII based on environmental rather than geo-political criteria. These issues remain to be discussed by the Conference of the Parties. Their resolution would not however necessarily resolve the WTO issues.

The rapid evolution of the legal regime for controlling the transboundary movement of hazardous and other wastes reflects the importance that parties have attached to acting quickly at the international political level to address the health and environmental damages caused by inadequate management of hazardous wastes, particularly as concerns hazardous wastes transferred from the industrialised part of the world to developing countries. This situation, taken together with the fact that neither basic data on volumes and hazardous characteristics of wastes generated and shipped across borders, nor universal definitions of hazardous wastes still do not exist, has contributed to uncertainty in industries involved in trade in recyclable wastes as to the Convention’s scope and the impact on their business. The dynamism of the Convention at the political level has to some extent outpaced the development of its scientific, technical and informational underpinnings. The work of the Technical Working Group should go quite some way to alleviating a good number of these practical concerns.

From a trade policy point of view the possibility exists that a State could find itself unable simultaneously to meet its obligations under the Basel Convention and the GATT/WTO Agreements. Whether such a conflict would be brought to the fore in the international arena is another question. WTO members have stated their view that if a dispute arises between WTO Members, Parties to an MEA, over the use of trade measures they are applying between themselves pursuant to the MEA, they should consider trying to resolve it through the dispute settlement mechanisms available under the MEA. The situation as between WTO members, only one of which is a Party to the Basel Convention, is more complex. In addition, a further distinction may arise as between those parties to the Basel Convention which ratify the amendment imposing the export ban and those which do not. Generally, issues could potentially arise with respect to the various export and import bans implemented under the Convention and WTO provisions concerning quantitative restrictions and non-discrimination. There is currently no international consensus on how such issues would be resolved.

The non-trade measures in the Convention have made useful contributions in areas such as model legislation, technical guidelines on environmentally sound management of particular forms of hazardous wastes, and the establishment of regional training centres. However, their potential role in more directly fulfilling the goals of the Convention through measures such as training and technology diffusion has been frustrated by the low level of resources devoted to these activities by the Parties. Any desire to de-emphasise the use of trade provisions in the future would need to acknowledge the consequent need to make larger financial commitments to the Convention than have hitherto occurred.

In light of the difficulties with global assessments of the effectiveness and efficiency of the trade measures in the Basel Convention, a more revealing, if limited, approach would be to focus on a specific waste at the country level. Country case studies currently under preparation by UNCTAD attempting to do this should therefore prove illuminating in this regard.

ANNEX A - FOURTH CONFERENCE OF THE PARTIES: SELECTED DECISIONS

UNEP/CHW.4/35
18 March 1998

IV/6. Outcome of the work of the Technical Working Group on lists of wastes and the applicable procedure for their review or adjustment

The Conference

1. Notes with appreciation the efforts of the Technical Working Group in preparing the List A and List B of wastes;

2. Considers the draft Position Paper together with the consolidated Lists A and B of wastes, and the applicable procedure for reviewing or adjusting List A and List B;

3. Agrees to approve the draft Position Paper on Hazard Characterization and Classification of Wastes within the Framework of the Basel Convention as contained in document UNEP/CHW.4/2;

4. Approves the List A and List B of wastes as submitted by the Technical Working Group;

5. Approves the Application Form for the Placement or Removal of Wastes on List A or List B developed by the Technical Working Group;

6. Extends the mandate of the Technical Working Group and instructs the Technical Working Group to keep the List A and List B of wastes under review using the Application Form for placement or removal of wastes on these Lists for this purpose;

7. Requests the Technical Working Group to provide the Conference of the Parties with recommendations on the revision or adjustment of List A and List B of wastes;

8. Notes the wastes placed on List C;

9. Instructs the Technical Working Group to review wastes on List C with a view to their placement on List A or List B;

10. Also instructs the Technical Working Group to initiate work on wastes about which particular concerns are or have been expressed;

11. Instructs the Technical Working Group to develop the procedure for reviewing or adjusting the lists of wastes and to submit a proposal for approval at the fifth meeting of the Conference of the Parties;

12. Requests the Technical Working Group to continue its work on the hazard characterization of wastes, in particular, for the hazard characteristics H6.2, H10, H11, H12 and H13 of Annex III to the Convention;

13. Requests the Secretariat to publish the draft position paper, in the official languages of the United Nations, and to disseminate it to Parties, signatories of the Convention, other States, intergovernmental organizations, industry and business, as well as to environmental non-governmental organizations;

14. Requests the Secretariat of the Basel Convention to ensure that the outcome of the work of the Technical Working Group be made available to Parties on a regular basis.

IV/8. Decision regarding Annex VII

The Conference,

Affirming the objectives set out in decision III/1,

Noting that the amendment contained in decision III/1 has not yet come into force, and therefore also noting decision IV/7 of this Conference, which urges Parties to ratify this Amendment as a matter of priority,

Further noting the deep concern of Arab and other countries of making any changes to Annex VII,

Reaffirming the importance of the broad ratification and entry into force of the amendment contained in decision III/1 and recognizing the difficulties of modifying Annex VII prior to the entry into force of that amendment;

Further noting the proposals formulated by Parties for inclusion into Annex VII,

1. Decides to leave Annex VII unchanged until the amendment contained in decision III/1 enters into force;

2. Further decides to explore issues relating to Annex VII and requests the Technical Working Group in cooperation with the Sub-group of Legal and Technical Experts to provide Parties with a detailed and documented analysis that would highlight issues related to Annex VII;

3. Requests those two Groups to report to the fifth meeting of the Conference of the Parties;

4. Confirms that the work to be undertaken is without prejudice to any future decisions concerning Annex VII.

IV/9. Amendment and adoption of annexes to the Convention

The Conference,

Recalling decision III/1 of the Conference of the Parties, which instructed the Technical Working Group, among other things, to give full priority to completing the work on hazard characterization and the development of lists, in order to submit them for approval to the fourth meeting of the Conference of the Parties,

Recalling decision III/12 of the Conference of the Parties, which instructed the Technical Working Group, among other things, to consider ways of taking forward the development of lists of hazardous wastes and the applicable procedure for their review based on the outcome of the work of the Technical Working Group, as well as further developing lists of wastes not covered by this Convention,

Taking note of the work carried out by the Technical Working Group and in particular the development of a list of wastes that are characterized as hazardous pursuant to Article 1, paragraph 1 (a), (list A contained in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment (UNEP/CHW.4/3)) and a list of wastes that are not covered by article 1, paragraph 1 (a), of this Convention (list B contained in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment), as well as the progress made in the development of a procedure for reviewing or adjusting these lists and of an application form required for the placement or removal of wastes on these lists,

Considering that Annex I and Annex III shall remain the factors to characterize wastes as hazardous for the purpose of this Convention, that lists A and B developed by the Technical Working Group provide an expeditious way to facilitate the implementation of this Convention, including Article 4A, by establishing wastes that are and wastes that are not covered by Article 1, paragraph 1 (a), of this Convention, and that these lists should have equal status,

Noting that wastes listed in lists A and B are an elaboration and clarification of the provisions of Article 1, paragraph 1 (a), of this Convention by reference to Annexes I and III,

Recognizing that List A and List B are not intended to be exhaustive,

Taking note that the Open-ended Ad Hoc Committee decided at its third meeting to propose that the Conference of the Parties extend the mandate of the Technical Working Group to take charge of the procedure for reviewing or adjusting the lists of wastes and that the Conference of the Parties adopt the application form for this purpose, as set out in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment,

Taking note that, pursuant to decision IV/6, the Technical Working Group is instructed to keep the lists of wastes under review and to make recommendations to the Conference of the Parties for revisions or adjustments,

Further taking note that, pursuant to decision IV/6, the Technical Working Group is instructed to review the procedure for reviewing or adjusting the lists of wastes, including the Application Form as set out in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment and to submit a proposal for approval at the fifth meeting of the Conference of the Parties,

Decides to adopt the following amendment and adoption of annexes to this Convention:

1. Add the following paragraphs at the end of Annex I:

(a) To facilitate the application of this Convention, and subject to paragraphs (b), (c) and (d), wastes listed in Annex VIII are characterized as hazardous pursuant to Article 1, paragraph 1 (a), of this Convention, and wastes listed in Annex IX are not covered by Article 1, paragraph 1 (a), of this Convention.

(b) Designation of a waste on Annex VIII does not preclude, in a particular case, the use of Annex III to demonstrate that a waste is not hazardous pursuant to Article 1, paragraph 1 (a), of this Convention.

(c) Designation of a waste on Annex IX does not preclude, in a particular case, characterization of such a waste as hazardous pursuant to Article 1, paragraph 1 (a), of this Convention if it contains Annex I material to an extent causing it to exhibit an Annex III characteristic.

(d) Annexes VIII and IX do not affect the application of Article 1, paragraph 1 (a), of this Convention for the purpose of characterization of wastes.

2. Add the following two new annexes to the Convention as its Annexes VIII and IX.

Annex VIII

LIST A

Wastes contained in this Annex are characterized as hazardous under Article 1, paragraph 1 (a), of this Convention, and their designation on this Annex does not preclude the use of Annex III to demonstrate that a waste is not hazardous.

A1 Metal and metal-bearing wastes

A1010 Metal wastes and waste consisting of alloys of any of the following:

- Antimony
- Arsenic
- Beryllium
- Cadmium
- Lead
- Mercury
- Selenium
- Tellurium
- Thallium

but excluding such wastes specifically listed on list B.

A1020 Waste having as constituents or contaminants, excluding metal waste in massive form, any of the following:

- Antimony; antimony compounds
- Beryllium; beryllium compounds
- Cadmium; cadmium compounds
- Lead; lead compounds
- Selenium; selenium compounds
- Tellurium; tellurium compounds

A1030 Wastes having as constituents or contaminants any of the following:

- Arsenic; arsenic compounds
- Mercury; mercury compounds.
- Thallium; thallium compounds

A1040 Wastes having as constituents any of the following:

- Metal carbonyls
- Hexavalent chromium compounds

A1050 Galvanic sludges

A1060 Waste liquors from the pickling of metals

A1070 Leaching residues from zinc processing, dust and sludges such as jarosite, hematite, etc.

A1080 Waste zinc residues not included on list B, containing lead and cadmium in concentrations sufficient to exhibit Annex III characteristics

A1090 Ashes from the incineration of insulated copper wire

A1100 Dusts and residues from gas cleaning systems of copper smelters

A1110 Spent electrolytic solutions from copper electrorefining and electrowinning operations

A1120 Waste sludges, excluding anode slimes, from electrolyte purification systems in copper electrorefining and electrowinning operations

A1130 Spent etching solutions containing dissolved copper

A1140 Waste cupric chloride and copper cyanide catalysts

A1150 Precious metal ash from incineration of printed circuit boards not included on list B [1]

A1160 Waste lead-acid batteries, whole or crushed

A1170 Unsorted waste batteries excluding mixtures of only list B batteries. Waste batteries not specified on list B containing Annex I constituents to an extent to render them hazardous.

A1180 Waste electrical and electronic assemblies or scrap[2] containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they possess any of the characteristics contained in Annex III (note the related entry on list B B1110)[3]

A2 Wastes containing principally inorganic constituents, which may contain metals and organic materials

A2010 Glass waste from cathode-ray tubes and other activated glasses

A2020 Waste inorganic fluorine compounds in the form of liquids or sludges but excluding such wastes specified on list B

A2030 Waste catalysts but excluding such wastes specified on list B

A2040 Waste gypsum arising from chemical industry processes, when containing Annex I constituents to the extent that it exhibits an Annex III hazardous characteristic (note the related entry on list B B2080)

A2050 Waste asbestos (dusts and fibres)

A2060 Coal-fired power plant fly-ash containing Annex I substances in concentrations sufficient to exhibit Annex III characteristics (note the related entry on list B B2050)

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1 Note that mirror entry on list B (B1160) does not specify exceptions.

2 This entry does not include scrap assemblies from electric power generation.

3 PCBs are at a concentration level of 50 mg/kg or more.

A3 Wastes containing principally organic constituents, which may contain metals and inorganic materials

A3010 Waste from the production or processing of petroleum coke and bitumen

A3020 Waste mineral oils unfit for their originally intended use

A3030 Wastes that contain, consist of or are contaminated with leaded anti-knock compound sludges

A3040 Waste thermal (heat transfer) fluids

A3050 Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives excluding such wastes specified on list B (note the related entry on list B B4020)

A3060 Waste nitrocellulose

A3070 Waste phenols, phenol compounds including chlorophenol in the form of liquids or sludges

A3080 Waste ethers not including those specified on list B

A3090 Waste leather dust, ash, sludges and flours when containing hexavalent chromium compounds or biocides (note the related entry on list B B3100)

A3100 Waste paring and other waste of leather or of composition leather not suitable for the manufacture of leather articles containing hexavalent chromium compounds or biocides (note the related entry on list B B3090)

A3110 Fellmongery wastes containing hexavalent chromium compounds or biocides or infectious substances (note the related entry on list B B3110)

A3120 Fluff - light fraction from shredding

A3130 Waste organic phosphorous compounds

A3140 Waste non-halogenated organic solvents but excluding such wastes specified on list B

A3150 Waste halogenated organic solvents

A3160 Waste halogenated or unhalogenated non-aqueous distillation residues arising from organic solvent recovery operations

A3170 Wastes arising from the production of aliphatic halogenated hydrocarbons (such as chloromethane, dichloro-ethane, vinyl chloride, vinylidene chloride, allyl chloride and epichlorhydrin)

A3180 Wastes, substances and articles containing, consisting of or contaminated with polychlorinated biphenyl (PCB), polychlorinated terphenyl (PCT), polychlorinated naphthalene (PCN) or polybrominated biphenyl (PBB), or any other polybrominated analogues of these compounds, at a concentration level of 50 mg/kg or more[4]

A3190 Waste tarry residues (excluding asphalt cements) arising from refining, distillation and any pyrolitic treatment of organic materials

A4 Wastes which may contain either inorganic or organic constituents

A4010 Wastes from the production, preparation and use of pharmaceutical products but excluding such wastes specified on list B

A4020 Clinical and related wastes; that is wastes arising from medical, nursing, dental, veterinary, or similar practices, and wastes generated in hospitals or other facilities during the investigation or treatment of patients, or research projects

A4030 Wastes from the production, formulation and use of biocides and phytopharmaceuticals, including waste pesticides and herbicides which are off-specification, outdated,[5] or unfit for their originally intended use

A4040 Wastes from the manufacture, formulation and use of wood-preserving chemicals[6]

A4050 Wastes that contain, consist of or are contaminated with any of the following:

- Inorganic cyanides, excepting precious-metal-bearing residues in solid form containing traces of inorganic cyanides
- Organic cyanides

A4060 Waste oils/water, hydrocarbons/water mixtures, emulsions

A4070 Wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish excluding any such waste specified on list B (note the related entry on list B B4010)

A4080 Wastes of an explosive nature (but excluding such wastes specified on list B)

A4090 Waste acidic or basic solutions, other than those specified in the corresponding entry on list B (note the related entry on list B B2120)

A4100 Wastes from industrial pollution control devices for cleaning of industrial off-gases but excluding such wastes specified on list B

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4 The 50 mg/kg level is considered to be an internationally practical level for all wastes. However, many individual countries have established lower regulatory levels (e.g., 20 mg/kg) for specific wastes.

5 "Outdated" means unused within the period recommended by the manufacturer.

6 This entry does not include wood treated with wood preserving chemicals.

A4110 Wastes that contain, consist of or are contaminated with any of the following:

- Any congenor of polychlorinated dibenzo-furan
- Any congenor of polychlorinated dibenzo-dioxin

A4120 Wastes that contain, consist of or are contaminated with peroxides

A4130 Waste packages and containers containing Annex I substances in concentrations sufficient to exhibit Annex III hazard characteristics

A4140 Waste consisting of or containing off specification or outdated[7] chemicals corresponding to Annex I categories and exhibiting Annex III hazard characteristics

A4150 Waste chemical substances arising from research and development or teaching activities which are not identified and/or are new and whose effects on human health and/or the environment are not known

A4160 Spent activated carbon not included on list B (note the related entry on list B B2060)

7 "Outdated" means unused within the period recommended by the manufacturer.

Annex IX

LIST B

Wastes contained in the Annex will not be wastes covered by Article 1, paragraph 1 (a), of this Convention unless they contain Annex I material to an extent causing them to exhibit an Annex III characteristic.

B1 Metal and metal-bearing wastes

B1010 Metal and metal-alloy wastes in metallic, non-dispersible form:

- Precious metals (gold, silver, the platinum group, but not mercury)
- Iron and steel scrap
- Copper scrap
- Nickel scrap
- Aluminium scrap
- Zinc scrap
- Tin scrap
- Tungsten scrap
- Molybdenum scrap
- Tantalum scrap
- Magnesium scrap
- Cobalt scrap
- Bismuth scrap
- Titanium scrap
- Zirconium scrap
- Manganese scrap
- Germanium scrap
- Vanadium scrap
- Scrap of hafnium, indium, niobium, rhenium and gallium
- Thorium scrap
- Rare earths scrap

B1020 Clean, uncontaminated metal scrap, including alloys, in bulk finished form (sheet, plate, beams, rods, etc), of:

- Antimony scrap
- Beryllium scrap
- Cadmium scrap
- Lead scrap (but excluding lead-acid batteries)
- Selenium scrap
- Tellurium scrap

B1030 Refractory metals containing residues

B1040 Scrap assemblies from electrical power generation not contaminated with lubricating oil, PCB or PCT to an extent to render them hazardous

B1050 Mixed non-ferrous metal, heavy fraction scrap, not containing Annex I materials in concentrations sufficient to exhibit Annex III characteristics [8]

B1060 Waste selenium and tellurium in metallic elemental form including powder

B1070 Waste of copper and copper alloys in dispersible form, unless they contain Annex I constituents to an extent that they exhibit Annex III characteristics

B1080 Zinc ash and residues including zinc alloys residues in dispersible form unless containing Annex I constituents in concentration such as to exhibit Annex III characteristics or exhibiting hazard characteristic H4.3 [9]

B1090 Waste batteries conforming to a specification, excluding those made with lead, cadmium or mercury

B1100 Metal-bearing wastes arising from melting, smelting and refining of metals:

- Hard zinc spelter
- Zinc-containing drosses:

  - Galvanizing slab zinc top dross (>90% Zn)
  - Galvanizing slab zinc bottom dross (>92% Zn)
  - Zinc die casting dross (>85% Zn)
  - Hot dip galvanizers slab zinc dross (batch)(>92% Zn)
  - Zinc skimmings

- Aluminium skimmings (or skims) excluding salt slag
- Slags from copper processing for further processing or refining not containing arsenic, lead or cadmium to an extend that they exhibit Annex III hazard characteristics
- Wastes of refractory linings, including crucibles, originating from copper smelting
- Slags from precious metals processing for further refining
- Tantalum-bearing tin slags with less than 0.5% tin

B1110 Electrical and electronic assemblies:

- Electronic assemblies consisting only of metals or alloys
- Waste electrical and electronic assemblies or scrap[10] (including printed circuit boards) not containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or not contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) or from which these have been removed, to an extent that they

8 Note that even where low level contamination with Annex I materials initially exists, subsequent processes, including recycling processes, may result in separated fractions containing significantly enhanced concentrations of those Annex I materials.

9 The status of zinc ash is currently under review and there is a recommendation with the United Nations Conference on Trade and Development (UNCTAD) that zinc ashes should not be dangerous goods.

10 This entry does not include scrap from electrical power generation.

do not possess any of the characteristics contained in Annex III (note the related entry on list A A1180)

· Electrical and electronic assemblies (including printed circuit boards, electronic components and wires) destined for direct reuse,[11] and not for recycling or final disposal[12]

B1120 Spent catalysts excluding liquids used as catalysts, containing any of:

Transition metals, excluding waste catalysts (spent catalysts, liquid used catalysts or other catalysts) on list A:	Scandium	Titanium
	Vanadium	Chromium
	Manganese	Iron
	Cobalt	Nickel
	Copper	Zinc
	Yttrium	Zirconium
	Niobium	Molybdenum
	Hafnium	Tantalum
	Tungsten	Rhenium
Lanthanides (rare earth metals):	Lanthanum	Cerium
	Praseodymium	Neody
	Samarium	Europium
	Gadolinium	Terbium
	Dysprosium	Holmium
	Erbium	Thulium
	Ytterbium	Lutetium

B1130 Cleaned spent precious-metal-bearing catalysts

B1140 Precious-metal-bearing residues in solid form which contain traces of inorganic cyanides

B1150 Precious metals and alloy wastes (gold, silver, the platinum group, but not mercury) in a dispersible, non-liquid form with appropriate packaging and labelling

B1160 Precious-metal ash from the incineration of printed circuit boards (note the related entry on list A A1150)

B1170 Precious-metal ash from the incineration of photographic film

B1180 Waste photographic film containing silver halides and metallic silver

B1190 Waste photographic paper containing silver halides and metallic silver

B1200 Granulated slag arising from the manufacture of iron and steel

B1210 Slag arising from the manufacture of iron and steel including slags as a source of TiO2 and vanadium

11 Reuse can include repair, refurbishment or upgrading, but not major reassembly.

12 In some countries these materials destined for direct re-use are not considered wastes.

B1220 Slag from zinc production, chemically stabilized, having a high iron content (above 20%) and processed according to industrial specifications (e.g., DIN 4301) mainly for construction

B1230 Mill scaling arising from the manufacture of iron and steel

B1240 Copper oxide mill-scale

B2 Wastes containing principally inorganic constituents, which may contain metals and organic materials

B2010 Wastes from mining operations in non-dispersible form:

- Natural graphite waste
- Slate waste, whether or not roughly trimmed or merely cut, by sawing or otherwise
- Mica waste
- Leucite, nepheline and nepheline syenite waste
- Feldspar waste
- Fluorspar waste
- Silica wastes in solid form excluding those used in foundry operations

B2020 Glass waste in non-dispersible form:

- Cullet and other waste and scrap of glass except for glass from cathode-ray tubes and other activated glasses

B2030 Ceramic wastes in non-dispersible form:

- Cermet wastes and scrap (metal ceramic composites)
- Ceramic based fibres not elsewhere specified or included

B2040 Other wastes containing principally inorganic constituents:

- Partially refined calcium sulphate produced from flue-gas desulphurization (FGD)
- Waste gypsum wallboard or plasterboard arising from the demolition of buildings
- Slag from copper production, chemically stabilized, having a high iron content (above 20%) and processed according to industrial specifications (e.g., DIN 4301 and DIN 8201) mainly for construction and abrasive applications
- Sulphur in solid form
- Limestone from the production of calcium cyanamide (having a pH less than 9)
- Sodium, potassium, calcium chlorides
- Carborundum (silicon carbide)
- Broken concrete
- Lithium-tantalum and lithium-niobium containing glass scraps

B2050 Coal-fired power plant fly-ash, not included on list A (note the related entry on list A A2060)

B2060 Spent activated carbon resulting from the treatment of potable water and processes of the food industry and vitamin production (note the related entry on list A A4160)

B2070 Calcium fluoride sludge

B2080 Waste gypsum arising from chemical industry processes not included on list A (note the related entry on list A A2040)

B2090 Waste anode butts from steel or aluminium production made of petroleum coke or bitumen and cleaned to normal industry specifications (excluding anode butts from chlor alkali electrolyses and from metallurgical industry)

B2100 Waste hydrates of aluminium and waste alumina and residues from alumina production excluding such materials used for gas cleaning, flocculation or filtration processes

B2110 Bauxite residue ("red mud") (pH moderated to less than 11.5)

B2120 Waste acidic or basic solutions with a pH greater than 2 and less than 11.5, which are not corrosive or otherwise hazardous (note the related entry on list A A4090)

B3 Wastes containing principally organic constituents, which may contain metals and inorganic materials

B3010 Solid plastic waste:

The following plastic or mixed plastic materials, provided they are not mixed with other wastes and are prepared to a specification:

· Scrap plastic of non-halogenated polymers and co-polymers, including but not limited to the following[13]:

- ethylene
- styrene
- polypropylene
- polyethylene terephthalate
- acrylonitrile
- butadiene
- polyacetals
- polyamides
- polybutylene terephthalate
- polycarbonates
- polyethers
- polyphenylene sulphides
- acrylic polymers
- alkanes C10-C13 (plasticiser)
- polyurethane (not containing CFCs)

13 It is understood that such scraps are completely polymerized.

- polysiloxanes
- polymethyl methacrylate
- polyvinyl alcohol
- polyvinyl butyral
- polyvinyl acetate

· Cured waste resins or condensation products including the following:

- urea formaldehyde resins
- phenol formaldehyde resins
- melamine formaldehyde resins
- epoxy resins
- alkyd resins
- polyamides

· The following fluorinated polymer wastes[14]

- perfluoroethylene/propylene (FEP)
- perfluoroalkoxy alkane (PFA)
- perfluoroalkoxy alkane (MFA)
- polyvinylfluoride (PVF)
- polyvinylidenefluoride (PVDF)

B3020 Paper, paperboard and paper product wastes

The following materials, provided they are not mixed with hazardous wastes:

Waste and scrap of paper or paperboard of:

· unbleached paper or paperboard or of corrugated paper or paperboard
· other paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass
· paper or paperboard made mainly of mechanical pulp (for example, newspapers, journals and similar printed matter)
· other, including but not limited to 1) laminated paperboard 2) unsorted scrap.

B3030 Textile wastes

The following materials, provided they are not mixed with other wastes and are prepared to a specification:

· Silk waste (including cocoons unsuitable for reeling, yarn waste and garnetted stock)

- not carded or combed
- other

14 - Post-consumer wastes are excluded from this entry
- Wastes shall not be mixed
- Problems arising from open-burning practices to be considered

· Waste of wool or of fine or coarse animal hair, including yarn waste but excluding garnetted stock

  - noils of wool or of fine animal hair
  - other waste of wool or of fine animal hair
  - waste of coarse animal hair

· Cotton waste (including yarn waste and garnetted stock)

  - yarn waste (including thread waste)
  - garnetted stock
  - other

· Flax tow and waste
· Tow and waste (including yarn waste and garnetted stock) of true hemp (Cannabis sativa L.)
· Tow and waste (including yarn waste and garnetted stock) of jute and other textile bast fibres (excluding flax, true hemp and ramie)
· Tow and waste (including yarn waste and garnetted stock) of sisal and other textile fibres of the genus Agave
· Tow, noils and waste (including yarn waste and garnetted stock) of coconut
· Tow, noils and waste (including yarn waste and garnetted stock) of abaca (Manila hemp or Musa textilis Nee)
· Tow, noils and waste (including yarn waste and garnetted stock) of ramie and other vegetable textile fibres, not elsewhere specified or included
· Waste (including noils, yarn waste and garnetted stock) of man-made fibres

  - of synthetic fibres
  - of artificial fibres

· Worn clothing and other worn textile articles
· Used rags, scrap twine, cordage, rope and cables and worn out articles of twine, cordage, rope or cables of textile materials

  - sorted
  - other

B3040 Rubber wastes

The following materials, provided they are not mixed with other wastes:

· Waste and scrap of hard rubber (e.g., ebonite)
· Other rubber wastes (excluding such wastes specified elsewhere)

B3050 Untreated cork and wood waste:

· Wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms
· Cork waste: crushed, granulated or ground cork

B3060 Wastes arising from agro-food industries provided it is not infectious:

- Wine lees
- Dried and sterilized vegetable waste, residues and byproducts, whether or not in the form of pellets, of a kind used in animal feeding, not elsewhere specified or included
- Degras: residues resulting from the treatment of fatty substances or animal or vegetable waxes
- Waste of bones and horn-cores, unworked, defatted, simply prepared (but not cut to shape), treated with acid or degelatinised
- Fish waste
- Cocoa shells, husks, skins and other cocoa waste
- Other wastes from the agro-food industry excluding by-products which meet national and international requirements and standards for human or animal consumption

B3070 The following wastes:

- Waste of human hair
- Waste straw
- Deactivated fungus mycelium from penicillin production to be used as animal feed

B3080 Waste parings and scrap of rubber

B3090 Paring and other wastes of leather or of composition leather not suitable for the manufacture of leather articles, excluding leather sludges, not containing hexavalent chromium compounds and biocides (note the related entry on list A A3100)

B3100 Leather dust, ash, sludges or flours not containing hexavalent chromium compounds or biocides (note the related entry on list A A3090)

B3110 Fellmongery wastes not containing hexavalent chromium compounds or biocides or infectious substances (note the related entry on list A A3110)

B3120 Wastes consisting of food dyes

B3130 Waste polymer ethers and waste non-hazardous monomer ethers incapable of forming peroxides

B3140 Waste pneumatic tyres, excluding those destined for Annex IVA operations

B4 Wastes which may contain either inorganic or organic constituents

B4010 Wastes consisting mainly of water-based/latex paints, inks and hardened varnishes not containing organic solvents, heavy metals or biocides to an extent to render them hazardous (note the related entry on list A A4070)

B4020 Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives, not listed on list A, free of solvents and other contaminants to an extent that they do not exhibit Annex III characteristics, e.g., water-based, or glues based on casein starch, dextrin, cellulose ethers, polyvinyl alcohols (note the related entry on list A A3050)

B4030 Used single-use cameras, with batteries not included on list A

ANNEX B - TABLES

Annex Table 1

LIST OF PARTIES TO THE BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL (ADOPTED IN 1989 AND ENTERED INTO FORCE IN 1992)

Africa	Asia and Pacific	Western Europe and Others	Central and Eastern Europe	Latin America and Caribbean
Benin	Bahrain	Australia	Bulgaria	Antigua and Barbuda
Burundi	Bangladesh	Austria	Croatia	Argentina
Comoros	China	Belgium	Czech Republic	Bahamas
Côte d'Ivoire	India	Canada	Estonia	Barbados
Democratic Republic of the Congo	Indonesia	Cyprus	Hungary	Belize
Egypt	Iran (Islamic Republic of)	Denmark	Latvia	Bolivia
Gambia	Japan	Finland	Poland	Brazil
Guinea	Jordan	France	Romania	Chile
Malawi	Kuwait	Germany	Russian Federation	Colombia
Mauritania	Kyrgyzstan	Greece	Slovakia	Costa Rica
Mauritius	Lebanon	Iceland	Slovenia	Cuba
Morocco	Malaysia	Ireland	The former Yugoslav Rep. of Macedonia	Ecuador
Mozambique	Maldives	Israel		El Salvador
Namibia	Micronesia (Federated States of)	Italy		Guatemala
Nigeria	Mongolia	Liechtenstein		Honduras
Senegal	Nepal	Luxembourg		Mexico
Seychelles	Oman	Monaco		Nicaragua
South Africa	Pakistan	Netherlands		Panama
Tunisia	Papua New Guinea	New Zealand		Paraguay
United Republic of Tanzania	Philippines	Norway		Peru
Zambia	Qatar	Portugal		Saint Kitts and Nevis
	Republic of Korea	Spain		Saint Lucia
	Saudi Arabia	Sweden		Saint Vincent and the Grenadines
	Singapore	Switzerland		Trinidad and Tobago
	Sri Lanka	Turkey		Uruguay
	Syrian Arab Republic	United Kingdom of Great Britain and Northern Ireland		Venezuela
	Thailand			
	Turkmenistan			
	United Arab Emirates			
	Uzbekistan			
	Vietnam			
	Yemen			
21	32	26	12	26
Political and/or Economic Integration Organisations: European Economic Community				

TOTAL NUMBER OF PARTIES: 117 States Parties and 1 Economic Integration Organisation. Source: Basel Convention Secretariat, February 1998

Table 2. **Summary of transfrontier movements of hazardous wastes from 1989 to 1993**

	Exports					Imports				
	1989 (tonnes)	1990 (tonnes)	1991 (tonnes)	1992 (tonnes)	1993 (tonnes)	1989 (tonnes)	1990 (tonnes)	1991 (tonnes)	1992 (tonnes)	1993 (tonnes)
Australia (1)	500	1000	3200	275	0	0	0	0	0	0
Austria (2)	86773	68162	82129	70023	83998	50981	19180	111595	79107	28330
Belgium (3)	176983	491784	645636	37278	34073	1036260	1070496	1021798	208052	236010
Canada (4)	101083	137818	223079	174682	229648	150000	143811	135161	123998	173416
Denmark	8120	9214	21758	15858	ND	11401	16376	15200	100244	ND
Finland	64665	19174	24174	21757	20628	7565	9889	4605	5145	4770
France	ND	10552	21126	32309	78935	ND	458128	636647	512150	324538
Germany (5,12)	990933	522063	396607	548355	433744	45312	62636	141660	76375	78219
Greece	ND	305	ND	ND	ND	ND	ND	ND	ND	ND
Iceland	ND	90	151	ND	ND	0	0	0	ND	ND
Ireland	13808	ND	ND	ND	ND	ND	ND	ND	ND	ND
Italy (6)	10800	19968	13018	21627	19365	0	0	0	ND	ND
Japan	40	0	ND	ND	ND	5125	397	ND	ND	ND
Luxembourg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Netherlands (7)	188250	195377	189707	172906	163180	88400	199015	107251	250355	236673
New Zealand (8)	200	0	21	208	10469	0	0	0	0	ND
Norway (9)	8078	16532	14636	14545	16639	0	0	2415	64070	81207
Portugal (10)	ND	1954	292	457	815	ND	0	1147	5638	7195
Spain (11)	280	20213	6578	15803	13943	27413	82269	81597	66356	104716
Sweden	45015	42636	63801	22185	22484	33863	47223	34195	61725	82933
Switzerland	108345	121420	126564	132138	125840	7684	6688	6416	10471	8360
Turkey	0	0	ND	ND	ND	0	0	ND	ND	ND
United Kingdom (12)	0	496	857	0	0	40740	34983	54074	44673	66294
United States (13)	118927	118416	108466	145556	142709	ND	ND	ND	ND	ND

Notes :

ND: No data provided
Due to differences in national definitions of hazardous wastes, great caution should be exercised when using these figures.

(1) Australian data refers to fiscal year (from 1st July to 30th June) and concerns permits for final disposal.
(2) Austria enforced its new Ordinance on hazardous wastes in 1991.
(3) Belgian data includes toxic wastes as well as household refuse, recyclable non ferrous metals etc.
(4) Canada enforced its new legislation on transfrontier movements of hazardous wastes in November 1992.
(5) Differences between 1989 and 1990 data are largely due to the German unification in 1990.
(6) 1989 export data is an estimate based on figures available for the last three months of the year.
(7) Dutch data excludes imports and exports of non-ferrous metals waste destined for recycling.
(8) Until 1992: PCBs exports only. In 1993: exports of hazardous wastes going to recovery only.
(9) The increase of imports in 1992 is due to huge amounts of aluminium salt slag being now sent to Norway to be recovered.
(10) Portugal enforced its new legislation on transfrontier movements of hazardous wastes in 1992.
(11) Spain changed its regulations concerning hazardous wastes between 1989 and 1990.
(12) Only wastes going to final disposal have to be notified.
(13) Until new legislation is passed to implement the Basel Convention the US requires written notice and consent for exports only.

Source: OECD (1997), Table 1.

Table 3. **Shares of exported and imported hazardous wastes compared to national generation in 1991 to 1993**

	Generation of hazardous wastes (1)		Exports						Imports					
	Year	(1000 t)	1991 (tonnes)	%	1992 (tonnes)	%	1993 (tonnes)	%	1991 (tonnes)	%	1992 (tonnes)	%	1993 (tonnes)	%
Australia	1992	426	3200	1.1	275	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Austria	1995	915	82129	13.2	70023	7.7	83998	9.2	111595	18.0	79107	8.6	28330	3.1
Belgium (2) *	1994	27530	645636	2.4	37278	0.1	34073	0.1	1021798	3.8	208052	0.8	236010	0.9
Canada	1991	5896	223079	3.7	174682	3.0	229648	3.9	135161	2.2	123998	2.1	173416	2.9
Denmark *	1993	91	21758	19.4	15858	17.4	ND	?	15200	13.6	100244	110.2	ND	?
Finland	1992	367	24174	9.7	21757	5.9	20628	5.6	4605	1.8	5145	1.4	4770	1.3
France	1992	7000	21126	0.3	32309	0.5	78935	1.1	636647	9.1	512150	7.3	324538	4.6
Germany	1993	9020	396607	6.6	548355	6.1	433744	4.8	141660	2.4	76375	0.8	78219	0.9
Greece *	1992	450	ND	?	ND	?	ND	?	ND	?	ND	?	ND	?
Ireland *	ND	66	ND	?	ND	?	ND	?	ND	?	ND	?	ND	?
Italy *	1991	3387	13018	0.4	21627	0.6	19365	0.6	0	0.0	ND	?	ND	?
Japan	ND	666	ND	?	ND	?	ND	?	ND	?	ND	?	ND	?
Netherlands (3)	1993	2600	189707	12.6	172906	6.7	163180	6.3	107251	7.2	250355	9.6	236673	9.1
New Zealand	1990	110	21	0.0	208	0.2	10469	9.5	0	0.0	0	0.0	ND	?
Norway	1991	220	14636	7.3	14545	6.6	16639	7.6	2415	1.2	64070	29.1	81207	36.9
Portugal	1994	1365	292	0.0	457	0.0	815	0.1	1147	0.1	5638	0.4	7195	0.5
Spain *	1987	1708	6578	0.4	15803	0.9	13943	0.8	81597	4.8	66356	3.9	104716	6.1
Sweden	1985	500	63801	12.8	22185	4.4	22484	4.5	34195	6.8	61725	12.3	82933	16.6
Switzerland *	1993	837	126564	17.2	132138	15.8	125840	15.0	6416	0.9	10471	1.3	8360	1.0
Turkey *	1989	300	ND	?	ND	?	ND	?	ND	?	ND	?	ND	?
United Kingdom *	1993	1957	525	0.0	0	0.0	0	0.0	46714	1.6	44673	2.3	66294	3.4
United States (4)	1993	258000	108466	0.0	145556	0.1	142709	0.1	ND	?	ND	?	ND	?
Total and average shares		**323411**		**6.0**		**4.2**		**4.3**		**4.3**		**11.9**		**6.7**

Notes :
ND: No data provided
Due to differences in national definitions of hazardous wastes, great caution should be exercised when using these figures.

(1) Most of this data has been communicated directly to the Secretariat of the Waste Management Policy Group with the exception of a few countries (marked with an asterisk) for which the source of this data is the Compendium 1995 of OECD Environmental Data.
(2) The figure for the generation of hazardous wastes in Belgium includes all wastes produced in the Wallonia region only by the industry sector such as residues from mining operations (about 3 MT), glass, wood, paper, food, ferrous and non-ferrous metals...
(3) Netherlands hazardous wastes generation includes 845 000 tonnes of contaminated soil.
(4) The difference between the waste generation figures for US and Europe arises largely because the US defines large quantities of dilute wastewaters as hazardous wastes while in Europe, these materials are managed under water protection regulations.

See Table 1 for footnotes on exports and imports.

Data is usually reported in terms of exports and imports among OECD countries, but occasionally it is provided for exports and imports to the world.

Source: OECD (1997), Table 2 and OECD (1994), Table 2.

Table 4. **Share of exports of hazardous wastes destined for final disposal or recovery in 1993**

Country	Exports 1993 (tonnes)	Wastes destined for final disposal (tonnes)	%	Wastes destined for recovery (tonnes)	%
Australia	0	0	-	0	-
Austria	83,998	29,136	34.7	54,862	65.3
Belgium	34,073	22,640	66.4	11,433	33.6
Canada	229,648	102,718	44.7	126,930	55.3
Denmark	n.d	n.d	-	n.d	-
Finland	20,628	0	0.0	20,628	100.0
France	78,935	21,661	27.4	57,274	72.6
Germany (1)	433,744	389,790	89.9	43,954	10.1
Greece	n.d	n.d	-	n.d	-
Iceland	n.d	n.d	-	n.d	-
Ireland	n.d	n.d	-	n.d	-
Italy	19,365	n.d	-	n.d	-
Japan	n.d	n.d	-	n.d	-
Luxembourg	n.d	n.d	-	n.d	-
Netherlands	163,180	84,138	51.6	79,042	48.4
New Zealand	10,469	0	0.0	10,469	100.0
Norway	16,639	3,594	21.6	13,045	78.4
Portugal	815	815	100.0	0	0.0
Spain	13,943	7,379	52.9	6,564	47.1
Sweden	22,484	77	0.3	22,407	99.7
Switzerland	125,840	68,801	54.7	57,039	45.3
Turkey	n.d	n.d	-	n.d	-
United Kingdom	0	0	-	0	-
United States	142,708	53,527	37.5	89,181	62.5
Average (2)			**41.6**		**58.4**

Notes:
n.d: no data provided.
Due to differences in national definitions of hazardous wastes, great caution should be exercised when using these figures.

1. The differences between systems for registering movements of hazardous wastes in "Länder" (states) explain the relatively small share of waste destined for recovery. From 1993, wastes destined for recovery also have to be notified.

2. The calculation of the average does not include Italy , for which the breakdown between wastes destined for final disposal and wastes destined for recovery was not available. The average has been calculated from data provided by 14 countries out of 24.

Source: OECD (1997), Table 11.

Table 5a**. Exports of hazardous wastes destined for final disposal in 1993**

IWIC code (1)	Final disposal operation	Quantity (tonnes)	%
D10	Incineration on land	376,046	47.9
D5	Specially engineered landfill	180,642	23.0
D9	Physico-chemical treatment	107,640	13.7
D1	Deposit into or onto land	54,105	6.9
D12	Permanent storage	49,313	6.3
D13	Blending or mixing before final disposal	5,783	0.7
D?	Disposal process not specified	5,271	0.7
D8	Biological treatment	2,956	0.4
D14	Repackaging before final disposal	2,596	0.3
D2	Land treatment	0	0.0
D3	Deep injection	0	0.0
D4	Surface impoundment	0	0.0
D6	Release into a water body except seas / oceans	0	0.0
D7	Release into seas / oceans including sea-bed insertion	0	0.0
D11	Incineration at sea	0	0.0
D15	Temporary storage before final disposal	0	0.0
Total (2)		**784,352**	**100.0**

Table 5b. **Exports of hazardous wastes destined for recovery in 1993**

IWIC code (1)	Recovery operation	Quantity (tonnes)	%
R4	Recycling / reclamation of metals and metals compounds	304,818	51.5
R1	Use as a fuel or other means to generate energy	60,860	10.3
R5	Recycling/reclamation of inorganic materials	52,569	8.9
R2	Solvent reclamation / regeneration	45,081	7.6
R6	Regeneration of acids or bases	34,879	5.9
R9	Used oil re-refining or other reuses	25,599	4.3
R10	Land treatment resulting in benefit to agriculture	22,269	3.8
R?	Recovery process not specified	19,416	3.3
R13	Accumulation of material intended for recovery operations	16,482	2.8
R3	Recycling of organic substances which are not used as solvents	5,782	1.0
R8	Recovery of components from catalysts	2,218	0.4
R7	Recovery of components used for pollution abatement	2,124	0.4
R11	Uses of residual materials	0	0.0
R12	Exchange of wastes for submission to recovery operations	0	0.0
Total (2)		**592,097**	**100.0**

Notes:
1. The International Waste Identification Code (IWIC) enables complete characterisation of the wastes, including information on their final destination: D... for final disposal and R... for recovery.
For more information see OECD Council Decision C (88) 90(Final) of 27 May, 1988.
2. Italy has not been included in tables 12 and 13, because the breakdown between wastes destined for final disposal and wastes destined for recovery was not available.

Therefore, the sum of these totals, which only includes 16 countries out of 24, is different from total OECD exports.

Source: OECD (1997), Tables 12 and 13.

Annex Table 6. Waste Streams Controlled by Basel Convention

- Pharmaceutical products, drugs, medicines, biocides and phytopharmaceuticals
- Wood preserving chemicals
- Organic solvents
- Heat treatment and tempering operations containing cyanides
- Mineral waste oils, emulsions
- Substances and articles containing polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)
- Tarry residues arising from refining
- Inks, dyes, pigments, paints, lacquers, varnish
- Resins, latex, plasticizers, glues/adhesives
- Chemical substances arising from research and development or teaching activities which are not identified and/or are new and whose effects on man and/or the environment are not known
- Photographic chemicals and processing materials
- Residues arising from industrial waste disposal operations

Source: Sheehan (1996), summarising *Basel Convention Annex I*

Annex Table 7. Waste Constituents Controlled by Basel Convention

- Metal carbonyls
- Beryllium; beryllium compounds
- Hexavalent chromium compounds
- Copper compounds
- Zinc compounds
- Arsenic; arsenic compounds
- Selenium; selenium compounds
- Cadmium; cadmium compounds
- Antimony; antimony compounds
- Tellurium; tellurium compounds
- Mercury; mercury compounds
- Thallium; thallium compounds
- Lead; lead compounds
- Inorganic fluorine compounds excluding calcium fluoride
- Inorganic cyanides
- Acidic solutions or acids in solid form
- Basic solutions or bases in solid form
- Asbestos (dust and fibres)
- Organic phosphorous compounds
- Organic cyanides
- Phenols; phenol compounds including chlorophenols
- Ethers
- Halogenated organic solvents
- Organic solvents excluding halogenated solvents
- Any congenor of polychlorinated dibenzo-furan
- Any congenor of polychlorinated dibenzo-p-dioxin
- Other organohalogen compounds

Source: Sheehan (1996), summarising Basel Convention Annex I.

Annex Table 8.

Results of Hazardous Waste Trade Proposals from OECD to non-OECD Countries, 1989-93

	1989	1990	1991	1992	1993	Total
actual	5	16	30	155	72	278
rejected	31	41	28	25	10	135
stopped/ returned	7	18	7	27	16	75
proposed/ planned	1	3	4	13	14	35
other/ unknown/ abandoned	25	28	29	48	14	144
Total	69	106	98	268	126	

Source: Krueger 1996: author's calculations based on: *Greenpeace Database of Known Hazardous Waste Exports from OECD to non-OECD Countries, 1989-March 1994*.

- Number of total known waste export schemes: 667
- Number of shipments resulting in trade for disposal or recycling: 278 (41.7%)
- Number of shipments rejected by importing state: 135 (20.2%)
- Number of shipments stopped by exporting state or returned to exporting state: 75 (11.2%)
- Number of shipments proposed/planned (without final result): 35 (5.2%)
- Number of abandoned shipments or schemes with unknown/other results: 144 (21.6 %)

NOTES

1. Krueger (1996) p.2 and 7; Hilz and Ehrenfeld (1991) p27; Wirth (1996) p.3-4.

2. Hagen and Housman (1995) p.132.

3. As demonstrated in the (unpublished) report to the Joint Session "International Statistics on Trade in Waste".

4. Data is usually provided on exports and imports as between OECD countries, but occasionally it is provided for exports and imports to the world. This, combined with the other shortcomings explained in the notes to the tables, means that meaningful conclusions on net flows can not be drawn.

5. Krueger (1996) estimates that 80-90% of hazardous waste movements are among OECD countries. As concerns metal scrap and residues, UNCTAD (1995) estimates that in 1993, 60% of trade was within the OECD, compared to 85% in 1980.

6. OECD Council Decision C(83)180(Final). A full account of the evolution of the OECD's system for monitoring and control of transboundary movement of hazardous wastes, including texts of the Decisions, is contained in OECD (1993*a*), from which this Section is drawn.

7. Decision-Recommendation C(86)64(Final) and Decision C(88)90(Final).

8. See Clapp (1994) on Africa and NGOs; Puckett (1994) and Strohm (1993) on the North/South dimension more generally.

9. Article 4, Paragraph 2 of the Convention states:

   Each Party shall take the appropriate measures to:

   (a) Ensure that the generation of hazardous wastes and other wastes within it is reduced to a minimum, taking into account social, technological and economic aspects;

   (b) Ensure the availability of adequate disposal facilities, for the environmentally sound management of hazardous wastes and other wastes, that shall be located, to the extent possible, within it, whatever the place of their disposal;

   (c) Ensure that persons involved in the management of hazardous wastes or other wastes within it take such steps as are necessary to prevent pollution due to hazardous wastes and other wastes arising from such management and, if such pollution occurs, to minimize the consequences thereof for human health and the environment; and

   (d) Ensure that the transboundary movement of hazardous wastes and other wastes is reduced to the minimum consistent with the environmentally sound and efficient management of such wastes, and is conducted in a manner which will protect human health and the environment against the adverse effects which may result from such movement.

10. In the Basel Convention context, the term "trade" is sometimes used to refer to the economic and commercial aspects of the movements of hazardous wastes, as distinct from the environmental aspects.

11. This description is taken from Rummel-Bulska (1996*a*).

12. This situation is an example of the friction between life cycle approaches to environmental issues and the trading system. As factors going beyond the inherent characteristics of the waste are taken into account, such as capacities of importing countries to treat such hazardous wastes, complex trade and environment issues concerning process and production methods arise. For example, who should decide whether a given recycling process is environmentally sound, and on the basis of which country's environmental concerns?

13. Canada and Australia both made statements following the adoption of the amendment decision which outlined their intention to await the outcome of the work of the Technical Working Group before considering ratification of the amendment. (SBC 1995, pp. 99-100).

14. Most of the hazard criteria have internationally agreed definitions. Hazard criteria which do not are particularly difficult to apply, e.g. H12 "Ecotoxic".

15. As noted in Technical Working Group "Position Paper on Hazard Characterization and Classification of Wastes within the Framework of the Basel Convention", UNEP/CHW/WG.4/12/2, a consensus emerged form the Global Workshop on the Implementation and Applicability of Decision II/12, held in Dakar in March 1995, that "a major problem with the implementation of the Basel Convention, including decision II/12, is the lack of sufficient definition, classification and characterisation of which materials are covered by the Basel Convention".

16. Discussions in the Technical Working Group have shown that various wastes considered for placement on lists A or B are in some cases still regarded as products in some countries.

17. UNCTAD is currently working on case studies of the impact of the Basel Convention on particular developing countries and particular hazardous waste flows.

18. Krueger (1996) pp. 22-25.

19. While in procedural terms no Party formally blocked a consensus on these Decisions, differing views were strongly expressed in debate over the policy position expressed in the Decisions.

20. Article 20.2 states further that "failure to reach common agreement on submission of the dispute to the International Court of Justice or to arbitration shall not absolve the Parties from the responsibility of continuing to seek to resolve it by the means referred to in paragraph 1."

21. Paragraph 178 of the December 1996 CTE Report [WT/CTE/1]. It has to be noted that at the meeting where the Report was adopted the Chairman of the CTE stated that this Report did not modify the rights and obligations of any WTO Member under the WTO Agreements. Several delegations expressed concerns and reservations on certain paragraphs of the Report. On paragraph 178 Mexico stated that "... no element in the Report could be used as a basis for action under the Dispute Settlement Understanding (DSU). As such, Mexico would have preferred not to have included paragraph 178. The DSU as well as other WTO Agreements provided for the right to invoke the DSU which could not be changed in any other fora than the WTO. Matters which were WTO-related should be dealt with in the WTO; those which were not within the WTO's competence should be dealt with outside the WTO. In case where there was a possibility to resort to one or another fora, there shall be freedom of choice, there was no relationship in terms of *lex-specialis* or *lex posterior* concerning which fora prevailed". [WT/CTE/M/13].

NAFTA parties explicitly addressed this issue, stating in Article 104 that insofar as specified environmental agreements, including the Basel Convention, contain their own dispute settlement processes, they will take precedence over the applicable dispute settlement processes of the NAFTA.

22. United States - Standards for Reformulated and Conventional Gasoline, Report of the Appellate Body, WTO document WT/DS2/AB/R, p. 16.

23. In addition, from a qualitative point of view, imported secondary material is often a necessary supplement of domestically recuperated material in developing countries. The purer the material to be recovered the higher the quality requirements of the scrap, the higher the tendency to import scrap from OECD. For an empirical survey in this regard, see: Beukering, P.V. and A. Duraiappach. "The economic and environmental impacts of the waste paper trade and recycling in India: a material balance approach", International Institute for Environment and Development, CREED Working Papers, N°10, Amsterdam, November 1996. (Dr. U. Hoffmann, personal communication 27 March 1997).

24. Presumably, if the Basel lists are incorporated into the Convention, this lack of clarity on the hazardous waste definition would be eliminated, although domestic definitions of waste will continue to present difficulties.

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