The Journal of Environment & Development

http://jed.sagepub.com

Prior Informed Consent and the Basel Convention: The Hazards of What Isn't Known

Jonathan Krueger

The Journal of Environment Development 1998; 7; 115
DOI: 10.1177/107049659800700203

The online version of this article can be found at:
http://jed.sagepub.com/cgi/content/abstract/7/2/115

Published by:
SAGE
http://www.sagepublications.com

Prior Informed Consent and the Basel Convention: The Hazards of What Isn't Known

JONATHAN KRUEGER

The international agreement to regulate hazardous waste trading, the Basel Convention, has relied on the procedure of prior informed consent (PIC) to ensure that human health and the environment are protected. As the debate over banning such trade continues, and as a new agreement using PIC for the trade in hazardous chemicals is being negotiated, it is useful to ask how effective the PIC mechanism has been. This article outlines how PIC functions in theory and in practice, and examines data on the notification and response rates of hazardous waste trade proposals. After outlining the experiences and drawbacks of the PIC mechanism for hazardous wastes, several lessons regarding the use of PIC for hazardous chemicals are suggested.

One of the most contentious environmental issues recognized in the 1980s was the growth in uncontrolled transboundary movements of hazardous wastes. In particular, there was concern about rich, industrialized countries exporting such wastes to poor, developing countries that lacked the administrative and technological resources to dispose of or recycle this waste safely. The international community responded with an attempt to regulate this so-called toxic trade in the form of the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. One of the key provisions of the Convention is the mechanism of prior informed consent (PIC), which requires that parties not export hazardous wastes to another party unless the competent authority in the importing state has been properly informed and has consented to the trade.

The purpose of this article is to outline the functioning of the PIC procedure in the context of the Basel Convention, as well as to assess the effectiveness of PIC as a mechanism designed to help fulfill the objectives of the Convention (to reduce the generation and movement of hazardous wastes and to ensure the environmentally sound management of such wastes). Although the data used in this analysis show a trend of increasing notifications of movements from Organization for Economic Cooperation and Development (OECD) countries to non-OECD countries and a decreasing number of rejections to those proposals, the lack of accurate information about the causes of waste movements highlights a serious flaw in the functioning of the PIC mechanism. Moreover, the lack of

Journal of Environment & Development, Vol. 7, No. 2, June 1998 115-137

resources and infrastructure for managing hazardous wastes in developing countries suggests that the validity of their consent is uncertain. The conclusion discusses the move from a notification and consent mechanism to a ban on certain waste trading in the Basel Convention and considers the lessons that the experience of prior informed consent for hazardous wastes could hold for the emerging PIC regime for hazardous chemicals.

The Trade in Hazardous Wastes and International Environmental Politics

International awareness of the problems associated with the trade in hazardous wastes increased noticeably during the 1980s due to several factors: the increasing amounts of wastes being generated, closure of old waste disposal facilities and political opposition to the development of new ones, and the dramatically higher costs associated with the disposal of hazardous wastes in industrialized countries and thus the potential for profits to be made by exporting such wastes to countries with low disposal costs (i.e., developing countries) (Strohm, 1993).

Exact figures regarding the generation of and trade in hazardous wastes are quite difficult to obtain; this is because the definition of "hazardous" varies in different countries and because there remain illegal waste trade operations that cannot be precisely quantified. However, some generally accepted figures are

- 300-500 million tons of hazardous wastes are generated internationally each year;
- the majority of this waste (80%-90%) is produced by OECD countries, of which roughly 10% is shipped across international boundaries;
- the majority of traded hazardous waste (80%-90%) is traded amongst industrialized countries;
- approximately 5.2 million tons of hazardous wastes were exported by industrialized states to Eastern Europe and developing countries in the period 1986-1990, and 2.5 million tons were exported from OECD to non-OECD countries between 1989 and March 1994; and
- disposal costs in the late 1980s varied from a low of U.S. $2.50 to U.S. $50 per ton in Africa to U.S. $100 to U.S. $2,000 per ton in industrialized countries (Kummer, 1995; United Nations Environment Programme, 1994; Organization for Economic Cooperation and Development, 1997).[1]

In addition to these general trends regarding hazardous waste management, there were a number of prominent cases of illegal international

1. For a more skeptical argument that hazardous waste trading is neither as big nor as dangerous as is often claimed, see Montgomery (1995).

hazardous waste movements including the voyages of the toxic waste ships Khian Sea and Karin B and the dumping of Italian polychlorinated biphenyls (PCBs) in a farmer's backyard in Koko, Nigeria (Moyers, 1991). Combined with the increased concern for environmental issues that characterized public opinion in industrialized countries in the late 1980s, these elements formed the wider international context surrounding the debate over controlling transboundary hazardous waste movements during the late 1980s. The apex of this debate was reached in 1989 with the establishment of the Basel Convention.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal

The Basel Convention was negotiated under the auspices of the United Nations Environment Programme (UNEP) between 1987 and 1989 (Kempel, 1993; Rummel-Bulska, 1994). Prior to this, in 1985 the nonbinding Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes were published and then approved by UNEP in June of 1987. In addition to the declared aim of ensuring the protection of human health and the environment against the effects of hazardous wastes, the Cairo Guidelines also adopted the principle of prior informed consent by states of import and transit for the transborder movements of such wastes.[2]

The Ad Hoc Working Group of Legal and Technical Experts charged with elaborating a global convention began their deliberations in October of 1987 and completed a total of five further meetings ending with the adoption of the Basel Convention in March 1989. Experts from 96 states participated in one or more of the often contentious negotiating sessions, and representatives of over 50 international organizations and NGOs attended as observers (Kummer, 1995, p. 40). There are now 117 parties to the Convention (as of February 1998), with the only notable nonparty being the United States (United Nations Environment Programme, 1998).

The objectives of the Basel Convention are to minimize the generation of hazardous wastes and to control and reduce their transboundary movements so as to protect human health and the environment. To achieve these objectives, the Convention contains several general obligations. For example, waste exports are prohibited to Antarctica (Art. 4.6) and to countries that have banned such imports as a national policy (Art. 4.1); additionally, waste exports to nonparties are prohibited unless they are subject to an agreement that is as equally stringent as the Basel

2. Guideline 26(f) is the PIC clause (United Nations Environment Programme, 1987).

Convention (Arts. 4.5 and 11). Those hazardous waste transfers that are permitted under the Basel regime are subject to the mechanism of PIC.

The evolution of the Basel Convention since its adoption has been described in detail elsewhere (Rosencranz & Eldridge, 1992; Sánchez, 1994; Strohm, 1993). However, the most significant development is the effort to ban hazardous waste exports from rich to poor countries. A 1994 decision by the Conference of Parties (COP) of the Basel Convention banned immediately the export of hazardous wastes from OECD to non-OECD countries for final disposal and, beginning in 1998, banned those wastes intended for recovery and recycling. I will return to the question of the ban in the final section of this article.

The Mechanics of PIC: Intended and Actual Operation

The use of the prior informed consent procedure did not begin with the Basel Convention. In addition to the UNEP Cairo Guidelines, the OECD adopted a Decision and Recommendation on transfrontier movements of hazardous wastes in February 1984 that required the prior notification of the "competent authorities" before a transborder shipment could take place. A 1986 recommendation formally proposed prior informed consent as a necessary prerequisite for waste exports (Smets, 1985). The European Community (EC) also began explicitly to address the issue in a 1984 directive (84/631) and a 1986 amendment to this directive, which prescribed prior notification and informed consent for hazardous waste movements within and outside the community (Ripa di Meana, 1990).

PIC in Theory

The regulations governing the PIC procedure in the Basel Convention are found in Articles 6 and 7 and in Annexes VA and VB. Parties to the Convention are required to designate at least one national competent authority who is responsible for the administration of the procedure. In most cases, designated competent authorities are offices within national environment or foreign affairs departments.[3] The PIC procedure applies to export states, import states, and transit states who are parties to the Basel Convention.

PIC requires the exporting state to notify the prospective states of import and transit of any intended transboundary movements of haz-

3. For the list of competent authorities registered with the Basel Convention, see Secretariat of the Basel Convention (1996).

ardous wastes. This information, provided by either the generator or exporter of the waste through the designated authority, or by the state itself, must enable the states of import and transit to assess the nature and the risks of the intended movement. Annex VA specifies the type of information to be given, including, among other things, the reason for export, the nature of the wastes, and the method of disposal. To promote standardization in this respect, the secretariat of the Convention has prepared an implementation manual for parties that includes draft notification forms, tips on how to fill them out, and lists of competent authorities (United Nations Environment Programme, 1995a).

The importing state must then respond in writing to the notification and either consent to the movement, deny permission, or request more information. If there is to be a transfer, the importer must confirm the existence of a contract between the exporter and the disposer guaranteeing the "environmentally sound" management and disposal of the waste.[4] Copies of the written response must also be sent to the competent authorities of all the states involved in the transaction (Art. 6.2), and the exporting state must not allow the transfer to begin until it has received written consent (as well as confirmation of a disposal contract).[5] Once the movement begins, furthermore, a document detailing the waste must accompany the waste at all times. Last, after completion of the operation, the exporter must be informed that final disposal has taken place (Art. 6.9).

The position of transit states within the PIC procedure was a subject of controversy during the negotiation of the Convention. The developing countries wanted to bestow the same powers of consent as was given to import states, whereas many industrialized states argued that this would be contrary to rights of passage as stipulated by international law (especially for transit of wastes through coastal waters). The compromise reached was that different rules apply to party transit states and nonparty transit states. In general, party transit states have the same ability to permit, deny, or request more information regarding a proposed movement as do import states, although they are also able to waive this right and allow for "tacit consent" if they have informed the secretariat that this is their intention (Art. 6.4). The position of nonparty transit states, on the other hand, is less clear. Notification of prospective non-

4. The Convention's formulation of what is *environmentally sound* management ("taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes," Art. 2.8) has been criticized as being overly vague; it is also unclear whether it is the exporting state or the importing state that determines what is "environmentally sound" (Abrams, 1990).

5. However, there is no requirement for the state of export to verify the contents of the contract between exporter and disposer; the transaction may begin simply on the verification that the contract exists (Kummer, 1995, p. 66).

party transit states is required, but whether the consent of that state is also needed before a movement can take place is not addressed.

If any of these procedures are contravened in any way, the waste shipment involved becomes illegal in the context of the Convention and the environmentally sound disposal of the waste becomes the responsibility of the offending party. For example, if the fault lies with the exporter for commencing a movement before written consent is received, then reimportation of the waste may be required. Similarly, if the importing state is the offender for having consented to a transfer that cannot be handled in an environmentally sound manner, then it becomes responsible for its safe disposal (Art. 9).

The Convention also contains obligations regarding exchange of information (Art. 13) and international cooperation (Art. 10), which could help mitigate some of the problems mentioned above. Parties are to communicate to the secretariat information regarding national definitions of hazardous waste, regulations governing the export and import of wastes, general information regarding exports and imports (i.e., amounts of hazardous wastes transferred and, if possible, their source and destination), and other information (United Nations Environment Programme, 1997c). The requirement for international cooperation was adopted to assist the developing countries assess and manage hazardous waste movements, as their lack of technical capacity could prove to be a hurdle to the successful implementation of the Convention.

PIC in Practice

The previous section outlined the basic mechanics of how the PIC procedure is designed to work. However, the question remains as to whether the procedure functions as it was intended to. The purpose here is to outline how PIC has worked in practice; the key problems identified relate to the competence of the competent authority, the potential for fraud, the situation of developing countries, and the ability of the secretariat to monitor the functioning of the procedure.

First, the requirement to designate a competent authority to manage the PIC procedure has generally been fulfilled.[6] However, the fact that an individual or office has been designated and given the authority to manage notifications and responses regarding waste trading does not mean that they have the resources or expertise to carry out this duty effectively. In one case, for example, a U.S. EPA official attempted to follow notifications regarding toxic chemical shipments to Africa and found that the competent authorities involved were either not in posses-

6. However, not all parties have informed the secretariat of their designated competent authority; as of March 1997, 81 competent authorities were listed from 110 parties (http://www.unep.ch/sbc/focal.wp5).

sion of the notice or had no ability to understand the implications and take appropriate action (Strohm, 1993, p. 141).

With respect to the export notification aspect of PIC, the attempt by the secretariat to standardize the format for notifications is a useful feature. Industrialized countries, as the principal exporters, would have little difficulty complying with export notification requirements. However, there is no obligation to use the draft notification form—parties are "requested" to use it—and so the effectiveness of a procedure intended to monitor the activity of parties is not as considerable as it could be (it is difficult to be certain that the notices were worded correctly or inspected by the appropriate authorities) (Clapp, 1994).

Nevertheless, there remains the possibility that a generator or exporter could falsify documents when reporting the content of the proposed waste shipment. Greenpeace has documented several instances when hazardous wastes were labeled as something else to circumvent the PIC procedure. In 1987, the Italian firms Jelly Wax and Ecomar sent more than 4,000 tons of toxic wastes under the label of substances "relating to the building trade" to Koko, Nigeria. The barrels containing the wastes, stored without precautions, began to leak before authorities discovered the problem. Many of the cleanup workers had no gloves, and several were hospitalized. The Italian government was forced to take back the waste, and the Nigerian government threatened the death penalty to anyone caught trading in hazardous wastes in Nigeria (Vallette & Spalding, 1990, pp. 93-96). In 1991-1992, Albania received toxic chemicals and pesticides—banned in the EC since 1983—under the guise of "humanitarian aid" for Albania's agricultural sector (Trade and Environment Database, n.d.). More recently, in 1996, a German company was found to have shipped 560 tons of mixed plastic waste (partly contaminated with chemicals and outdated medicine) to Beirut that was declared to be plastic raw material for industrial production.[7] If such fraud is not detected by the competent authority, or if the competent authority is in collusion with the illegal activity, then the notification scheme becomes useless.

By far the greatest drawback to the PIC system lies with the ability of the importing country to make an informed decision as to whether or not consent should be granted. As one participant has observed, "clearly, the successful application of the PIC system depends on a sophisticated national infrastructure," as well as resources and expertise (Kummer, 1995, p. 81; see also Hackett, 1990). In cases in which the importer is a developing country, problems with what constitutes proper "consent" and the ability to assess the risks of importing hazardous wastes may be considerable. How valid is the consent of poor countries who accept large sums of badly needed foreign exchange? An oft-cited quotation involves the Trade and Tourism minister of Guinea-Bissau who was

7. The waste was returned to Germany under their "Solidarity Fund for Re-Exporting Waste" (Greenpeace, 1997a).

asked why his country had agreed to receive over 15 million tons of toxic waste in return for $600 million: he answered, "We need money" (Puckett, 1994).[8]

The Convention does contain a requirement for international cooperation because it was anticipated that the lack of technical capacity and know-how in developing countries could prove to be a hurdle to its successful implementation. Once again, however, progress in this area has been slow. Specific cities in developing countries have been selected as "Regional or Sub-regional Centres for Training and Technology Transfer," but little actual training or technology transfer has taken place under this initiative.[9] Similarly, the establishment of an emergency fund for accidents involving hazardous waste remains under discussion.

Secretariats can play a significant role in the operation of an international agreement. Of course, the ability of the secretariat to function properly depends first on the scope of the duties it is given by the agreement, and second on the availability of resources to conduct its activities. In the case of the Basel Convention, the secretariat's ability to help parties implement the PIC procedure has been limited in both ways. First, with regard to the breadth of the role assigned to the secretariat by the Convention, it should be noted that the implementation of PIC was originally designed to be ensured by the parties controlling private actors' involvement in transboundary movements of hazardous wastes (Kummer, 1995, p. 82). However, the monitoring of compliance with the PIC procedure was severely limited by not requiring parties to send copies of notifications and responses to the secretariat unless a party believed that the environment would be harmed by a given proposal (Article 13.4). Earlier drafts of the Convention proposed by developing countries did oblige parties to inform the secretariat of all proposals, notifications, and responses, but this was eliminated from the final draft because of political pressure (the United States and other industrialized countries argued that this would be a highly inefficient use of the secretariat's resources) (Abrams, 1990, p. 835; Kummer, 1995, p. 67). In this way, Basel contrasts with the Bamako Convention, which obliges parties to send all notifications and responses to the secretariat (Art. 13.2.d). With respect to movements that do not follow the PIC procedure correctly, there is as yet no way to enforce liability in the case of an illegal movement or an environmentally damaging transfer.[10] These two defi-

8. Guinea-Bissau eventually canceled the deal under pressure from African countries and other groups.

9. The regional centers established to date are located in Montevideo, Bratislava, and Beijing (United Nations Environment Programme, 1997a).

10. In general, the lack of a mechanism to deal with liability (for an illegal transfer) and compensation (for a transfer that results in environmental damage) is an oft-cited weakness of Basel.

ciencies (of monitoring and enforcement) are further significant limitations to the proper functioning of the Basel Convention's PIC procedure.

Second, the secretariat has been operating with very limited financial resources to carry out the duties for which it is responsible. Unpaid contributions to the Trust Fund for the Implementation of the Basel Convention up to 1994 were U.S. $347,203; as of 31 August 1995, the total of unpaid pledges for that year was U.S. $1,122,193 (or 51.6% of total pledged contributions) (United Nations Environment Programme, 1995c). Although the chronic underfinancing of secretariat activities has been recognized by the COP, only full payment of pledged contributions will allow the secretariat to be as effective as it could be. In the words of the independent consultant who reported to the third COP:

> Availability of adequate financial resources is of critical importance to the effective implementation of the Basel Convention. A large number of the Parties will be unable, for the foreseeable future, to take the necessary legal, administrative, institutional, monitoring and related measures without assistance from the Secretariat; and such assistance cannot be provided to the extent needed without financial resources. (United Nations Environment Programme, 1995d)

Last, parties are also required to communicate to the secretariat information regarding national definitions of hazardous waste, regulations governing the export and import of wastes, general information regarding exports and imports (i.e., amounts of hazardous wastes transferred and, if possible, their source or destination), and other information. Similar to many international environmental agreements, however, the information transmitted to the secretariat is not complete; for example, only half the parties supplied the information required under Articles 13 and 16 in 1993.[11]

The above analysis suggests that, in theory, the PIC procedure could be a good mechanism for monitoring transboundary movements of hazardous wastes. The information given by the exporting state should allow the importing state to make an environmentally sound decision regarding acceptance or rejection of the waste. In practice, however, because of the lack of administrative, technical, and financial resources in many developing countries, the PIC mechanism cannot always function as intended. Other elements, such as the lack of mandate and resources available to the secretariat to aid the implementation of PIC, also restrict the PIC mechanism from functioning exactly as designed.

11. Data reporting in accordance with Articles 13 and 16 (Transmission of Information and Functions of the secretariat) for the year 1993 was completed by 48 of 83 parties (United Nations Environment Programme, 1995e).

The Effectiveness of PIC: Has It Made a Difference?

The previous section profiled some general difficulties with respect to the functioning of PIC; this section will investigate to what degree the procedure actually operates. In the same way that reliable data regarding the amount of hazardous waste produced and traded are difficult to obtain, reliable information regarding the functioning of PIC is also scarce. Among the best data are those kept by Greenpeace, and they will provide the basis for the analysis in this article.[12] This section will (a) examine the available data regarding the acceptance-rejection rate of waste trade proposals and (b) try to determine if following the PIC procedure allows for better, or more environmentally sound, decisions with regards to hazardous waste trading.

NOTIFICATION AND CONSENT UNDER THE PIC MECHANISM

One way of assessing the effectiveness of PIC is to determine if, first of all, the procedure is actually followed and to explore whether PIC has influenced the behavior of states wanting to trade in wastes. This section examines the issue by comparing the pre-Basel and post-Basel periods.

OUTCOMES OF WASTE TRADE PROPOSALS, 1970-1990

This period predates the Basel Convention, although PIC mechanisms for hazardous waste transfers were coming into use by the late 1980s in the OECD and EC. Even without a formalized PIC procedure, however, sovereign governments were always at liberty to refuse wastes from another country *if* they were aware of a shipment. Greenpeace data for the period 1970 to 1990 categorizes developing countries as those with per capita gross national product (GNP) of less than U.S. $1,840 and middle-income countries as those with per capita GNP of more than U.S. $1,840 but without a market economy (i.e., including nations from Eastern Europe). With respect to developing countries, Greenpeace documents 103 proposals to transfer hazardous waste, 78 rejections (75%

12. Greenpeace data are taken from press sources, government files, trade data, special contacts, and field research; they have been used by other studies as well, and United Nations Environment Programme (UNEP) cites Greenpeace statistics as reliable estimates of hazardous waste flows to developing countries (Montgomery, 1995, pp. 4-5; United Nations Environment Programme, 1994). More recent data, since COP-3 in 1995 for example, are not yet available in this format from Greenpeace or other sources (such as UNEP). However, the Greenpeace definition of hazardous waste does not always accord with, for example, the Organization for Economic Cooperation and Development or UNEP definitions. This is another reason why the Basel Convention Secretariat should have the authority and resources to collect international data using a harmonized definition.

rejection rate), and 16 instances of waste crossing a boundary.[13] Of these 16 cases, 2 shipments were dumped at sea, 8 were rejected after being discovered and exported back to the source, and 5 were shipped and dumped unsafely against the wishes of the importing government. For middle-income countries, Greenpeace documents 98 proposals and 53 rejections (55% rejection rate).

These data, perhaps not surprisingly, lead to conflicting interpretations. On the one hand, Greenpeace suggests that the number of attempts to export hazardous waste to developing countries show why it is important to ban the toxic trade rather than rely on a weak regulatory system such as PIC, which is referred to as a rubber stamp. Indeed, Greenpeace argues that these data only represent the tip of the iceberg and that proposed international waste trade deals are increasing (see data in next section) (Puckett, 1994).[14] On the other hand, different reviewers of the same data suggest that PIC in fact works quite well, based on the high rate of rejections by importing states (Montgomery, 1995, pp. 10-11). Without more detailed information, it is difficult to assess the degree to which the rate of rejections was the result of properly functioning notification procedures or other factors.

OUTCOMES OF OECD TO NON-OECD WASTE TRADE PROPOSALS, 1989-1993

This period includes the adoption (1989) and entry into force (1992) of the Basel Convention and shows a slightly different trend (see Table 1 and Figure 1). Although it should be noted that these data are based on an OECD, non-OECD grouping (unlike the previous data set, which was based on per capita GNP), there is a downward trend in the number of rejections by importing non-OECD countries at the same time that waste trade proposals are increasing (Figure 2). Unlike the 1970-1990 period when 75% of waste trade proposals to least developed countries were refused, the 1989-1993 period resulted in only a 20% refusal rate.[15]

13. The raw data come from the Greenpeace Inventory (Vallette & Spalding, 1990) but was arranged by Montgomery (1995).

14. Of course, it is crucial to note that the larger goal of Greenpeace is not just to stop transborder hazardous waste transfers, but to reduce and eventually eliminate the production of such wastes at the source; their support for a trade ban is only part of their larger agenda.

15. Nevertheless, it should also be noted that despite the low rejection rate of 20%, only 42% of the proposed transfer proposals actually took place; keeping aside the 22% of unknown cases, 11% were either stopped or returned to the exporter. Thus, the rejection rate figures by themselves do not accurately portray the state of waste trading (there is an equal number of unknown results). Last, if the decrease in the number of proposals between 1992 and 1993 reflects a downward movement in the number of proposals, then future data may show a different trend. These questions could be answered by improved monitoring of PIC by the secretariat.

Table 1
Results of Hazardous Waste Trade Proposals from OECD to non-OECD Countries, 1989-1993

	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: Author's calculations based on Greenpeace Database of Known Hazardous Waste Exports from OECD to non-OECD Countries, 1989–March 1994 (Greenpeace, 1994).
Note: Total 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 %). Because the data for the year 1994 are incomplete (covering only the first 3 months), they are left out of this analysis. The data in this table are used for Figures 1 and 2. OECD = Organization for Economic Cooperation and Development.

One possible explanation for this trend is that the number of waste trade proposals that claim to be for recycling or recovery have increased dramatically, and therefore importing countries are less likely to refuse wastes that have value (as opposed to wastes that will simply be dumped).[16] Greenpeace sources suggest that between 1980 and 1988, only 30% of all waste trade proposals were listed for further use or for recycling; by 1989-1990, that figure had risen to 54% and again to 90% for 1993. However, a waste that is declared for recycling may simply be dumped or recycled in a hazardous manner; waste traders in Spain have been arrested for importing German plastic scrap for recycling and then dumping it illegally (MacKenzie, 1992, p. 8; Puckett, 1994, p. 56). Moreover, even when a proportion of these wastes are recycled, amounts of remaining hazardous material then need to be land-filled or incinerated. In these cases, the PIC mechanism does not have the desired effect of preventing unsafe waste movements.

Another possible explanation is that, as the Basel Convention began to influence the behavior of party states in the early 1990s, the improved information that importing states were receiving allowed them to make more informed decisions, rather than rejecting proposals outright.[17] Or, as more and more countries have instituted hazardous waste import

16. According to Organization for Economic Cooperation and Development estimates, the recoverable waste trade alone was valued at U.S. $16 billion in 1989 (Kummer, 1995, p. 9).

17. Industry has argued that consent is rare and denial the "easiest course of action" (Bullock, 1996).

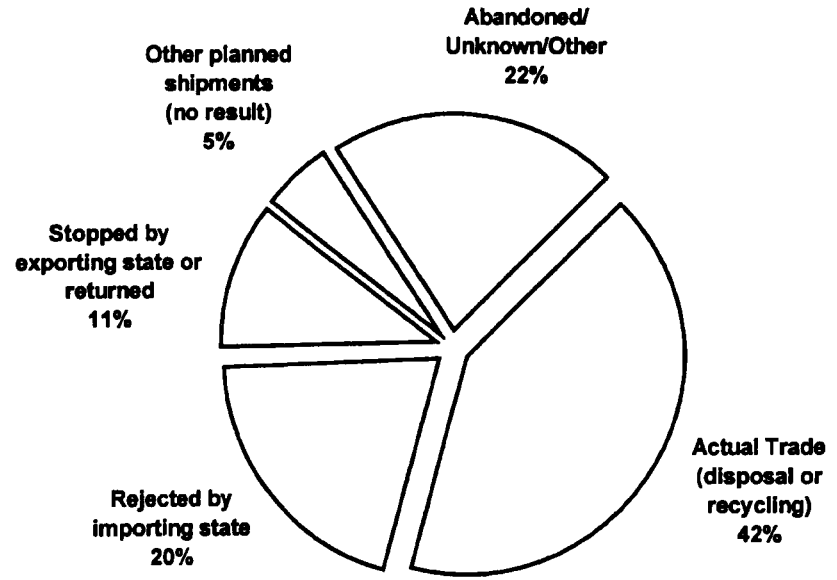

Figure 1: Results of OECD to non-OECD Hazardous Waste Schemes, 1989-1993
Source: Author's calculations based on Greenpeace Database of Known Hazardous Waste Exports from OECD to non-OECD Countries, 1989–March 1994 (Greenpeace, 1994).

bans, the number of states that must accept or reject proposals is reduced and therefore the total number of reported rejections is also reduced.[18] Wastes are then channeled to states that do not ban imports, including many in Eastern Europe and Asia, and overall rejection rates again decrease as a result.[19] Once again, however, the lack of detailed information makes it difficult to explain the trend in decreasing rejections. To that degree, the weakness of the PIC procedure in providing complete and accurate information about the nature of waste trade proposals and acceptances/rejections means that our understanding about the state of hazardous waste trading is not improved by the Basel Convention.

18. The number of countries banning hazardous waste imports just prior to the adoption of the Basel Convention in 1989 was 33; that number has now risen to over 100 (Greenpeace, 1995). Thus, the number of countries that would be in a position to formally reject waste trade proposals has dropped dramatically. However, wastes can still be transferred illegally despite an import ban; see, for example, the cases documented by the secretariat (United Nations Environment Programme, 1995d).

19. There has been a dramatic increase in the number of proposals for trade with Eastern European countries in the 1989-1994 period as they have not been as swift to implement trade bans as many African countries (Puckett, 1994, p. 54). Moreover, Greenpeace's infrastructure in Asia prior to 1994 was not as developed as in other parts of the world, so the downward trend in rejections may also be partially explained by the fact that Greenpeace was unable to pressure Asian governments to reject waste trade proposals until after 1994 (personal communication with former Greenpeace International waste campaigner, August 26, 1997).

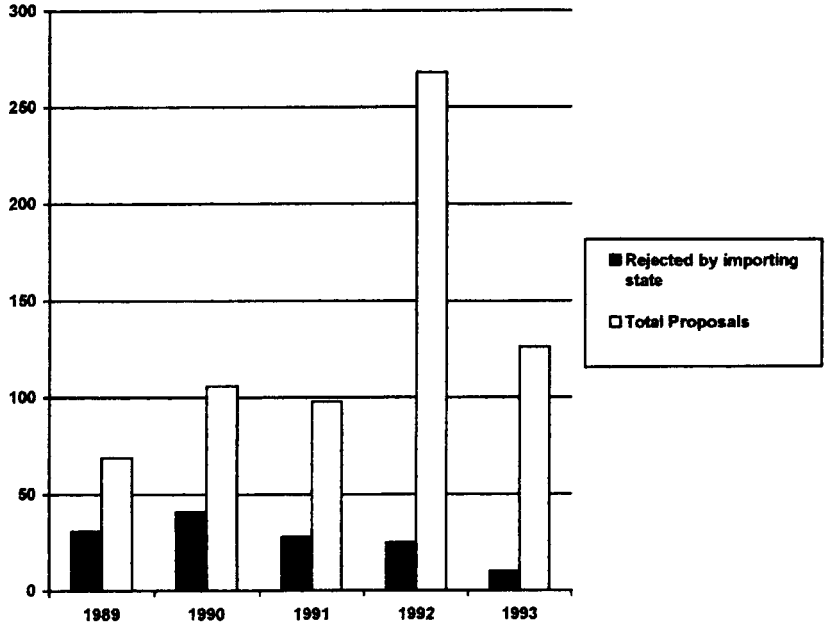

Figure 2: Waste Trade Proposals Refused Consent by non-OECD Importing Countries, 1989-1993

Source: Author's calculations based on Greenpeace Database of Known Hazardous Waste Exports from OECD to non-OECD Countries, 1989–March 1994 (Greenpeace, 1994).

DECISION MAKING UNDER PIC

In theory, the information given to importing states under PIC should improve their ability to decide whether or not a proposed movement should be accepted under the terms of the Basel Convention. The notification document designed by the secretariat includes most of the important details, which, if listed correctly, should allow the competent authority to make an environmentally responsible decision. However, the available data do not allow for a precise explanation of why 20% of OECD to non-OECD trade proposals were rejected between 1989 and 1993, and 75% rejected between 1970 and 1990. This reinforces the need for the secretariat to compile information regarding all proposals and responses in order to monitor the functioning of the PIC procedure. As PIC currently operates under Basel, there is not even a response document equivalent to the notification and movement documents prescribed for use by the secretariat.

In many ways, however, the decision to ban waste movements to developing countries reflects a belief that decision making in those countries is not adequately improved by PIC because of their lack of resources. The preamble to Decision III/1 (the ban amendment) states

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 Basel Convention." More and better information does not automatically lead to improved decision making. In practice, there must be the capacity to analyze and process this information in a way that complies with the goals of the agreement (to protect human health and the environment). Without this, the likelihood that the PIC procedure will improve decision making is low.

The inability of developing countries to comply with Convention requirements also hampers decision making in industrialized, exporting countries. Austrian authorities, for example, have pointed out that when developing countries cannot fulfill basic obligations such as designation of a competent authority to implement PIC, the ability of exporting countries to comply with the Convention is hampered (personal communication, Federal Ministry for the Environment, Youth and Family, Republic of Austria, August 6, 1996). Moreover, despite attempts by the secretariat to improve the ability of developing countries to implement PIC successfully (by holding workshops and seminars, for example, or by creating "draft model legislation for the implementation of the Basel Convention"), the secretariat has been hampered by its own problems (discussed above). All of these factors together suggest that, in practice, the ability of the PIC procedure to improve decision making as regards the acceptance or rejection of hazardous wastes by developing countries is questionable.

Conclusions: PIC in the Context of the International Regime to Manage Transboundary Hazardous Waste Movements

This article has analyzed the functioning and effectiveness of the PIC mechanism in the context of the Basel Convention. One recurring theme is that complete data on the functioning of PIC are not available. This fact was recognized in the report on the effectiveness of the Basel Convention, noting that without better information, it would be premature to evaluate the effectiveness of the Convention so soon after its entry into force (United Nations Environment Programme, 1995d). Perhaps information provided under Article 13, which requires parties to submit data on waste generation, trade, and disposal, will allow for a better assessment of the state of hazardous waste trading in the future. However, as long as the secretariat does not receive notification and response documents, it cannot monitor how PIC actually operates. This structural flaw in the Convention greatly restricts an accurate analysis of its effec-

tiveness. There is a significant difference in the rejection rates of the pre-Basel and post-Basel periods, but it is not clear whether decreasing rejections are the result of a failure of PIC or other contextual factors such as the growing amount of waste sent for further use or the increasing number of developing countries that have banned imports.

Therefore, a minimal change required to improve—or at least standardize—the operation of the "consent" mechanism would be the creation of a response document (equivalent to the notification and movement documents already in existence) to be used by importing states. This form would specify what authority was responding to a given notification, indicate the reasons for accepting or rejecting it, and list any conditions attached to the acceptance of such a proposal. Rather than object to such a document as further paperwork, all involved parties should view it as the minimum requirement for creating a fully functioning PIC mechanism. After all, to fully understand the dynamics of the international trade in hazardous wastes, complete information about notifications, movements, and responses is required.

A more significant institutional change that would further alleviate the information problem would be to require copies of all notifications and responses to be sent to the secretariat. An improved PIC (using standardized notification, response, and movement documents flowing through the secretariat) would not only generate more accurate information about the scale and dynamics of the international waste trade but would also make it easier to distinguish between legal and illegal shipments. Better information obtained with a refined PIC procedure would add both greater clarity and certainty to the process, benefiting actors involved in the trade as well as those who might be harmed by unsafe waste transfers. Without these changes, the Convention will continue to fly blind in terms of monitoring the PIC procedure and compiling information about the true state of the international hazardous waste trade.

Despite the limitations on complete information regarding the functioning of PIC, several important conclusions about the future development of the Basel Convention can be made based on the analysis above. They relate to the situation of developing countries, the current controversy over Decision III/1, and the lessons that can be learned for the use of PIC for trade in hazardous chemicals.

SITUATION OF DEVELOPING COUNTRIES

The most contentious aspect of the hazardous waste trade is the export of wastes from rich countries to poor ones. As with many other issue areas in international environmental politics, developing countries often lack the resources and infrastructure needed to implement the rules and procedures of international agreements. The UNEP report on the effectiveness of the Basel Convention states:

> While most of the developed industrial State Parties have adopted fairly elaborate legislation on most of these [implementation] issues, very few of the developing country Parties have formulated adequate legislation or suitable administrative procedures on these subjects. In fact, many of these countries still lack the necessary legal and institutional framework to effectively control and prevent the dumping of hazardous wastes on their territories. (United Nations Environment Programme, 1995d)

Given these circumstances, the PIC mechanism by itself is unlikely to be effective in improving the ability of importing states to protect human health and the environment. Recent reports list India, China, and Brazil as examples of developing countries that were unable to prevent hazardous wastes from being transferred to their territories, despite a complete ban (India, Brazil) and tight restrictions (China) (Bussey, 1997; CNN, 1996; Greenpeace, 1997b). The problem of hazardous waste trading is related not only to the functioning of PIC but also to the capacity of the actors involved.

THE CONTINUING DEBATE: BAN OR PIC?

The key issue for the future development of the Basel Convention is the decision to ban hazardous waste exports from what are known as Annex VII countries (members of the EU, OECD, and Liechtenstein) to non-Annex VII countries. The most controversial aspect of this decision, originally known as Decision II/12 and then as Decision III/1 (once the ban was formally adopted as an amendment), is the ban on exports of wastes intended for recovery and recycling. The debate centers at the moment on the question of which wastes are defined as *hazardous* for the purposes of recycling and recovery; a technical working group has been assigned the task of drawing up the list of banned wastes for report to the fourth Conference of Parties in February, 1998.[20] Because of the economic interests of certain industrialized countries and, increasingly, some developing countries, in the maintenance of a trade in wastes for recycling, the ban may or may not be endorsed (the amendment must be ratified by two thirds of the parties who were present at COP-3 to enter into force).[21]

20. For an update on the progress of the Technical Working Group, see the Report of the group's twelfth session (United Nations Environment Programme, 1997d). Underlying the debate over assigning wastes to lists that would either subject them to the ban or not is the question of when a waste can be considered a product. Parties have yet to tackle this question formally (Kummer, 1994, pp. 40-41). A further controversy is over the question of whether or not Article 11 of the Basel Convention (which allows for trade with nonparties subject to an agreement that is not less environmentally sound than Basel) applies to the ban.

21. Both Canada and Australia have stated that their support for Decision III/1 will be contingent on the results of the Technical Working Group. Some developing countries, specifically India and Brazil, are also voicing concerns about the economic costs of the ban (*ENDS Report*, 1996). As of January 1998, seven countries (Finland, Norway, Luxembourg,

For proponents of the ban, this decision has been partially inspired by the inability of the PIC mechanism to allow poorer countries to protect themselves from imported hazardous waste. Indeed, there have been attempts since the negotiation of the original Convention to institute a ban on North-South hazardous waste movements, and Decision III/1 represents only the latest of a number of decisions that have attempted to move the regime from one managed by PIC to one that restricts certain hazardous waste trading absolutely.[22] Moreover, a large number of countries have instituted national import bans (more than 100), and the number of regional agreements (such as Bamako, Lomé IV, the Central American Agreement on Hazardous Waste, the Waigani Convention, and the protocol on waste trading of the Barcelona Convention) that ban hazardous waste imports has also increased since the 1980s.

Critics of the ban, on the other hand, argue that the ban reflects political, and not environmental or economic, considerations.[23] In many ways, the debate regarding the ban merely reproduces many of the same disputes that existed when PIC was chosen as the core regulatory mechanism for the Convention in 1989 (Krueger, 1996). These concerns involve the moral, administrative, and economic aspects of regulating the international hazardous waste trade. The moral argument to ban the trade of hazardous wastes (that it is wrong for rich countries to send their wastes to poor countries) has remained an important force in the development of the Basel regime. The PIC mechanism has done little to address this concern, however, because PIC is intended to allow trade.

The administrative and economic debates today are also similar to those in 1989. When PIC was selected, advocates argued that the obligations of PIC to document and monitor every hazardous waste movement would provide the necessary transparency for control and intervention in the case of an accident, whereas a ban would simply force such movements into secrecy and illegality (Kummer, 1994, pp. 58-59). This controversy remains significant in the debate regarding Decision III/1, with differing opinions as to whether or not the ban will simply increase the numbers of illegal transfers.[24]

Spain, Denmark, Sweden, and the United Kingdom) and the European Commission have ratified the ban amendment (personal communication with the European Commission, January 15, 1998).

22. Decision I/22, requesting that industrialized countries "refrain" from exporting wastes to developing countries, was taken in December 1992. Decision II/12, prohibiting waste transfers from Organization for Economic Cooperation and Development (OECD) to non-OECD for disposal and recycling (by December 31, 1997), was taken in March 1994. Decision III/1, formally adopting Decision II/12 as an amendment to the Convention (but using the Annex VII/non-Annex VII distinction), was taken in September 1995.

23. Industry in general is extremely hostile to the ban for recycling, and it characterizes it as being economically inefficient, patronizing to developing countries, and contrary to the principle of free trade (Bullock, 1996).

The economics of the international toxic waste trade remain an influential factor in the current discussions, much as they were in the original negotiations. For example, the trade in metal scraps and metal-bearing residues, used as secondary materials, had an average value of U.S. $37.2 billion per year between 1980 and 1993 (Alter, 1997). If this trade is stopped, it is argued, then some importing countries may turn to the exploitation of virgin resources to gain the materials they need, and this would not be in line with the concept of sustainable development. Moreover, critics argue that the ban does nothing to address environmentally damaging trade between non-Annex VII countries (South-South trade), a situation that is again contrary to sustainable development. Although the ban may be administratively simpler to implement than PIC, this would be at the expense of a major objective that PIC was designed to preserve—namely, the trade in recyclable hazardous wastes. Competing visions regarding the desirability of the trade remain, however. If this trade is desired, then an improved PIC mechanism is necessary to properly monitor it and protect human health and the environment.[25]

Based on the available data, some observers argue that because importing (developing) countries rejected wastes more often than not before the Basel Convention, an economically detrimental ban is premature (Montgomery, 1995, p. 21). However, after updating this analysis to include the 1989-1994 period, as is done here, it is no longer clear that rejections by importing countries are as common as before. To improve the functioning of the PIC procedure for those countries that may still trade in hazardous wastes, the parties to the Basel Convention should grant the secretariat the ability to monitor notifications and responses under PIC. Moreover, technical and financial support for developing

24. The United Nations Environment Programme report on the matter reflects this debate: "Paradoxically, while Decision II/12 significantly restricts legal traffic and thereby should help simplify verification of compliance by enhancing overall transparency regarding global transboundary movements, it is also likely to create additional incentives to engage in illegal movements of hazardous wastes" (United Nations Environment Programme, 1995b, p. 4). It might be added that illegal shipments under a ban would likely remain as unquantified as they are under PIC. However, the argument made by supporters of the ban is that by closing the recycling loophole, incentives are created to reduce hazardous waste generation, which in turn also reduces the need to export wastes. In this way, the ban may provide more incentive to achieve another of the Convention's objectives: to minimize the generation of hazardous waste. Critics, on the other hand, argue that the ban as it is currently conceived will only distort the economics of waste recycling and not lead to less hazardous waste being generated (Cox & Sheales, 1996).

25. Industry remains unhappy even with prior informed consent, however: "It is also necessary that the Convention ameliorate its less direct trade barriers to international trade in recyclable materials, such as the time-consuming complexity of the prior informed consent procedure" (Bullock, 1996).

countries should be increased to ensure that the PIC procedure can function as it was intended.

LESSONS FROM THE BASEL EXPERIENCE

Negotiations are currently under way to establish a global legally binding agreement that uses prior informed consent to control the trade in hazardous chemicals (United Nations Environment Programme, 1997b; Earth Negotiations Bulletin, 1997-1998). The experience of the functioning of the PIC procedure in the context of the Basel Convention provides several valuable lessons for consideration in the new regime. First, it should be accepted by all parties that PIC is indeed the correct mechanism for addressing the problem at hand. From the outset of the Basel Convention, most developing countries argued for an outright global ban, but a small number of industrialized states were able to establish the PIC mechanism in the original Convention (Clapp, 1994). If a majority of actors believe that another regulatory option should be used (such as a ban), then the use of PIC against their wishes will likely result in less effective international management of the problem (as a patchwork of national bans and regional agreements compete with the international mechanism).

Second, if an administratively complex procedure such as PIC is chosen, then the administrative and resource capacities of the parties must be as equal as possible. As noted under the Basel Convention, the effectiveness of the PIC procedure becomes questionable when developing country parties lack the ability to properly implement the procedure. This problem can only be tackled by the existence of strong international political will to provide resources, training, and technology so that all parties can effectively implement PIC (Gündling, 1989).

Last, the secretariat must have the authority and resources to adequately monitor the implementation of PIC. Notification and consent forms must be standardized and flow through the secretariat. This would not only improve the monitoring and transparency of the PIC procedure but also provide a more accurate picture of the state of the hazardous waste or chemicals trade by providing information about trade flows and quantities of transfers. The case of the Basel Convention clearly shows that if this does not take place, then an adequate analysis of the implementation of PIC cannot be made. Moreover, the lack of adequate understanding about the functioning of the PIC mechanism and the proportions of the hazardous waste trade may lead some actors to call for its replacement with more restrictive measures (such as trade bans). If these lessons are not considered when designing the PIC agreement for hazardous chemicals, then this new regime may face the same difficulties that have plagued the development of the Basel Convention.

Manuscript submitted February 7, 1997; revised manuscript accepted for publication November 12, 1997.

Acknowledgments

A previous version of this article appeared as International Institute for Applied Systems Analysis (IIASA) Working Paper WP-96-113. The author would like to thank David Victor, Owen Greene, Ian Rowlands, and the anonymous reviewers of *JED* for comments.

References

Abrams, D. J. (1990). Regulating the international hazardous waste trade: A proposed global solution. *Columbia Journal of Transnational Law, 28*(3), 827-831.

Alter, H. (1997). Industrial recycling and the Basel Convention. *Resources, Conservation and Recycling, 19*, 29-53.

Bullock, J. C. (1996, January). *The Basel Convention and trade*. Paper for the Global Environment and Trade Study.

Bussey, J. (1997, October 26). Toxic waste trade growing with few controls. *Miami Herald*, p. F1.

Clapp, J. (1994). Africa, NGOs and the international toxic waste trade. *Journal of Environment & Development*, 3(2), 17-46.

CNN. (1996). India flooded by toxic wastes says Greenpeace. *CNN Interactive* [Online]. Available: http://cnn.com/EARTH/9607/14/india.dumping.wir/index.html

Cox, A., & Sheales, T. (1996). Basel Convention: Economic issues in the ban on shipments of hazardous waste. *Australian Commodities*, 3(3), 384-397.

Earth Negotiations Bulletin. (1997-1998). *Reports of the Intergovernmental Negotiating Committee for an International Legally Binding PIC Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 15*(2-4) [Online]. Available: http://www.iisd.ca/linkages/chemical/index.html

ENDS Report. (1996). *255*, 46-47.

Greenpeace. (1994). *Database of known hazardous waste exports from OECD to non-OECD countries*, 1989-March 1994. Amsterdam: Greenpeace International.

Greenpeace. (1995). *The Basel ban: The pride of the Basel Convention* (Greenpeace document prepared for the Third Conference of Parties, September 18-22). Washington, DC: Greenpeace USA.

Greenpeace. (1997a). *Last batch of plastic waste leaves Beirut port to Germany* (Greenpeace press release). Washington, DC: Greenpeace USA.

Greenpeace. (1997b). *U.S. exports of lead acid batteries poisoning Brazil* (Greenpeace press release). Washington, DC: Greenpeace USA.

Gündling, L. (1989). Prior notification and consultation. In G. Handl & R. Lutz (Eds.), *Transferring hazardous technologies and substances: The international legal challenge*. London: Graham & Trotman.

Hackett, D. P. (1990). An assessment of the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal. *American University Journal of International Law and Policy, 5*(29), 291-323.

Kempel, W. (1993). Transboundary movements of hazardous wastes. In G. Sjöstedt (Ed.), *International environmental negotiation* (pp. 48-62). Newbury Park, CA: Sage.

Krueger, J. (1996). *Regulating transboundary movements of hazardous wastes: The Basel Convention and the effectiveness of the Prior Informed Consent (PIC) Procedure* (IIASA Working Paper WP-96-113). Laxenburg, Austria: International Institute for Applied Systems Analysis.

Kummer, K. (1994). *Transboundary movements of hazardous wastes at the interface of environment and trade* (United Nations Environment Programme Environment and Trade Series #7). Geneva: United Nations Environment Programme.

Kummer, K. (1995). *International management of hazardous wastes: The Basel Convention and related legal rules*. Oxford, UK: Clarendon.

MacKenzie, D. (1992). Europe continues "poison my neighbour" exports. *New Scientist, 136*, 8.

Montgomery, M. A. (1995). Reassessing the waste trade crisis: What do we really know? *Journal of Environment & Development, 4*(1), 1-28.

Moyers, B. (1991). *Global dumping ground: The international traffic in hazardous waste*. Cambridge, UL: Lutterworth.

Organization for Economic Cooperation and Development. (1997). *Transfrontier movements of hazardous wastes: 1992-93 statistics*. Paris: Author.

Puckett, J. (1994). Disposing of the waste trade: Closing the recycling loophole. *The Ecologist, 24*(2), 53-58.

Ripa di Meana, C. (1990). Hazardous waste shipments: Regulations within the EC. *Marine Policy, 14*(3), 271-274.

Rosencranz, A., & Eldridge, C. L. (1992). Hazardous wastes: Basel after Rio. *Environmental Policy and Law, 22*(5/6), 318-322.

Rummel-Bulska, I. (1994). The Basel Convention: A global approach for the management of hazardous wastes. *Environmental Policy and Law, 24*(1), 13-18.

Sánchez, R. (1994). International trade in hazardous wastes: A global problem with uneven consequences for the Third World. *Journal of Environment & Development, 3*(1), 137-152.

Secretariat of the Basel Convention. (1996). *Managing Hazardous Wastes, 8*.

Smets, H. (1985). Transfrontier movements of hazardous wastes: An examination of the Council Decision and Recommendation. *Environmental Policy and Law, 14*, 16-21.

Strohm, L. A. (1993). The environmental politics of the international waste trade. *Journal of Environment & Development, 2*(2), 129-153.

Trade and Environment Database. (n.d.). *Industrial Waste in Albania* [Online]. Available: http://gurukul.ucc.american.edu/ted

United Nations Environment Programme. (1987). *Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes* (UNEP Governing Council Decision 14/30). New York: United Nations.

United Nations Environment Programme. (1994). *Environmental data report 1993-94*. London: Blackwell.

United Nations Environment Programme. (1995a). *UNEP/CHW.3/Inf.3* New York: United Nations.

United Nations Environment Programme. (1995b). *Monitoring implementation of and compliance with the Basel Convention* (UNEP/CHW.3/Inf.5). New York: United Nations.

United Nations Environment Programme. (1995c). *Status of contributions to the Basel Convention trust funds as at 31 August 1995* (UNEP/CHW.3/Inf.13). New York: United Nations.

United Nations Environment Programme. (1995d). *Evaluation of the effectiveness of the Basel Convention* (UNEP/CHW.3/Inf.7). New York: United Nations.

United Nations Environment Programme. (1995e). *Compilation of Country Fact Sheets (Based on reports from the contracting parties for 1993)* (UNEP/CHW.3/Inf.11). New York: United Nations.

United Nations Environment Programme. (1997a). *The Basel Convention: A global solution for controlling hazardous wastes*. New York: United Nations.

United Nations Environment Programme. (1997b). *UNEP Chemicals Newsletter, 1*(1).

United Nations Environment Programme. (1997c). *Reporting and transmission of information required under the Basel Convention: Compilation of information received May 1992-March 1994* (UNEP/SBC/94/7). New York: United Nations.

United Nations Environment Programme. (1997d). *Report of the Twelfth Session of the Technical Working Group* (UNEP/CHW/WG.4/12/10). New York: United Nations.

United Nations Environment Programme. (1998). *Secretariat of the Basel Convention press release*. New York: United Nations.

Vallette, J., & Spalding, H. (Eds.). (1990). *The international trade in wastes: A Greenpeace inventory* (5th ed.). Washington, DC: Greenpeace USA.

Jonathan Krueger is a Ph.D. student in the International Relations Department at the London School of Economics and Political Science.