
Improving Public Education on Global Environmental Treaties Using the Basel Convention as an Example

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I. Introduction

Public education campaigns, including news media coverage, have a major role to play in providing compelling, timely information to the general public and to policy makers regarding global environmental treaties and the problems the treaties are intended to solve. This is especially true at critical junctures in the treaty-making process: (i) illuminating the need for a new treaty or an amendment to an existing treaty, (ii) expediting the process of signing and ratifying treaties, and (iii) monitoring implementation and compliance.

Previous studies analyzed media coverage of environmental issues with the assumption that increasing news coverage will have a beneficial influence on the treaty process (Kollmus 2001, Otsaka 2006). While this is most likely true, this analysis aims to test a more extensive hypothesis: that *traditional news media coverage of global environmental treaties is currently inadequate and does not reach the full public, including both politically engaged “elites” and less politically engaged citizens.* In this context, the problem with public information as it relates to the treaty process is multifaceted, as follows:

- There is a *lack of information/public education delivered in an effective form to the general public*, through the news media and through other, accessible formats, either by the United Nations Environment Programme (UNEP) or by nongovernmental organizations (NGOs) involved in monitoring and influencing the treaty process. As noted by Lawrence Susskind (2006), “We don’t produce information in a form that changes what the general public thinks.”

- Influenced by this lack of public information is a *lack of public concern and political will to implement treaties.* Urgency of the problem, communicated to policymakers and the general public, appears to be one of key reasons the 1989 Montreal Protocol on Substances That Deplete the Ozone Layer succeeded. This global regime phased out chlorofluorocarbons (CFCs) believed to deplete the ozone layer that protects the earth from harmful solar radiation. Nations adopted the Montreal Protocol in the wake of scientists’ discovery of a large hole in the ozone layer over Antarctica. Without a crisis like the ozone hole, however, there may be little urgency to sign, ratify, or implement a treaty. According to Haas, Keohane, and Levy (as cited in Chasek, Downie, and Brown 2006), one prerequisite for strong environmental regimes is a sufficient level of concern in governments and possibly among citizens to induce countries to focus on solving the problem. The lack of such concern can greatly hamper the development of effective environmental treaties.

This paper examines gaps in public information on environmental treaties, using newspaper coverage as a primary indicator, and proposes strategies to address these gaps through specific public education efforts by the United Nations Environment Programme (UNEP) and nongovernmental actors; it includes a discussion of how the two might work together and which types of education are appropriate to each domain. The failure of news media to educate the

public raises the question of how concerned organizations can go beyond traditional news to provide credible information on global environmental issues, with a focus on the uses of pop culture to reach a broader audience.

In order to provide specific examples, I focus on the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Two recent events make it particularly appropriate to analyze recent news coverage of the hazardous waste treaty: (i) the widely publicized, illegal disposal of hazardous waste from a European trading vessel in Abidjan, Ivory Coast, in August 2006 and (ii) the Conference of Parties to the Basel Convention 8 in Nairobi, Kenya, November 27 – December 1, 2006.

As evident in these two events, addressing problems with the hazardous waste trade requires the involvement of both industrialized nations (in terms of managing their waste responsibly) and developing nations (in terms of building capacity to enforce environmental regulations and protect their own populations). This analysis focuses on the role of industrialized nations in this process and makes recommendations to improve public information accordingly.

II. The Problem with Hazardous Waste and the Problem with Basel

In order to understand specific problems that public education can address, it is useful to look briefly at problems with the trafficking of hazardous waste and with the Basel Convention.

A. The Hazardous Waste Trade

The international trade of hazardous waste is difficult to quantify. According to UNEP, approximately 300 to 500 million tons of hazardous waste are produced every year and about 10 percent of this waste is shipped across national borders, primarily among OECD countries (Chasek, Downie, and Brown 2006). The Secretariat of the Basel Convention, meanwhile, estimates that countries exported 7.5 million tons of industrial and chemical waste in 2003, with only one million tons of this material being disposed of properly (Lokongo 2006). This suggests that at least 6.5 million tons of hazardous waste are being illegally disposed of in a manner that poses risks to human and environmental health. This includes industrial, chemical, domestic materials as well as electronic waste (“e-waste”) and old ships containing toxic material (shipbreaking waste).

The export of hazardous waste, particularly from richer Northern countries to poorer Southern countries, poses particular problems in terms of human rights, equity, and environmental justice. The Basel Action Network estimates that 30 industrialized nations produce 90 percent of the world’s hazardous waste (BAN 2006). Informal estimates from electronic waste recyclers in the U.S. suggest that 50% to 75% of the waste that is collected is exported. (Kyle 2006)

While some of this trade is considered legal if proper disposal and notification procedures are followed, there have been numerous cases of dumping in Asian and African nations by international traders. Most recently, in August 2006, 400 tons of sludge from a European-based trader ended up in Ivory Coast, where improper handling by a local company resulted in at least

ten deaths and thousands of illnesses. A UNEP spokesperson described the incident as the "tip of the iceberg" in the international waste trade (Lokongo 2006, Article 5/no page available).

Illegal trade appears to be increasing, according to the European Network for the Implementation and Enforcement of Environmental Law (IMPEL), an informal network of environmental regulators in European countries. Between 2003 and 2006, IMPEL's European Seaport Project coordinated 4,198 inspections at ports in 13 European nations; of those vessels containing waste, half the cargoes were illegal under EU regulations (IMPEL 2006). While it is difficult to quantify this problem precisely, it is clear that it exists on a fairly large scale and has the potential to cause serious damage to human health and the environment.

B. The Basel Convention and Basel Ban

The 1989 Basel Convention seeks to regulate the shipment of hazardous waste across borders in response to growing international trade in hazardous waste, particularly from industrialized to developing countries.

From the early stages, discussions for the Basel regime were characterized by a divide between waste-importing states, which wanted a ban on hazardous waste shipments, and waste-exporting states, which wanted to allow hazardous waste trade with "informed consent." Led by the U.S., a veto coalition of industrialized countries succeeded in weakening the final regime into an informed consent treaty rather than a ban (Chasek, Downie, and Brown 2006). Thus, countries may export hazardous waste for disposal but must first obtain written permission from the importing company as well as a permit describing the waste and its destination.

The Basel Convention was signed in March 1989 with 168 parties and 53 signatories and entered into force in May 1992. To date, three signatories have not ratified it: Afghanistan, Haiti, and the U.S., with the U.S. being the only industrialized and OECD country not to ratify, indicating a continued resistance by the U.S. to restrict the flow of hazardous materials overseas.

Several changes subsequently strengthened the convention, including the 1991 Bamako Convention in which 12 African countries banned imports of hazardous waste and the 1995 "Basel Ban," in which 82 states banned exports of hazardous waste from OECD countries to non-OECD countries, resurrecting the ban that was quashed in the original convention, without the U.S. and Canada. The amendment has not received the three-fourths ratification needed to enter into force but it is considered to be in practice by the signatories and provides a basis for strict EU regulations on disposal of hazardous waste (BAN 2006; IMPEL 2006).

Basel is an example of a weak initial regime that has been strengthened by subsequent agreements, largely excluding the veto coalition that weakened the original agreement. Additions to the convention have addressed some initial criticisms. For instance, complaints about the confusion between hazardous waste and recyclables were countered with a 1999 list of which wastes were banned and which exempt; in 2004, the parties developed technical guidelines for 20 waste streams. Some disagreement continues over the distinction between hazardous waste and recyclable goods, in part due to a lucrative trade in recyclables. Financial resources for implementation are also a problem. A significant development to improve compliance is the

establishment of Basel Convention Regional Centers in Asia, Africa, Latin American, and Eastern Europe to help developing/transitional countries with capacity-building and technical assistance (Shibata 2003).

Even with these changes, environmental organizations are clearly concerned about the weakness of the regime; the convention itself is considered ineffectual without the Basel Ban Amendment (Kyle 2006). There are serious obstacles to enforcement and cleanup, including the technology, resources, and political will to prevent and manage hazardous waste (Susskind 1994). Nongovernmental organizations, especially Greenpeace, played a significant role in exposing the issue of hazardous waste trade and continue to play a role in monitoring compliance, notably the Basel Action Network.

II. Analysis of Recent Media Coverage of Basel Convention

Numerous studies document the fact that news coverage can wield a strong influence on public opinion as well as policy formation (Howland, Becker, and Prelli 2005). This is particularly true during stages one and two of the treaty-making process, which the authors refer to as “intelligence gathering” and “promotion” of new regime. In their analysis of news coverage of the Montreal Protocol, the authors also note brief increases in news coverage that correspond with major events such as international policy conferences, reports of scientific results, and controversy.

This paper looks at news media coverage of two of these types of occurrences related to environmental treaties: (1) the dumping of hazardous waste by an international commodities trader in Abidjan, Ivory Coast, in August 2006 (a controversy) and (2) COP8 of the Basel Convention in Nairobi in November (an international conference).

A. Ivory Coast

On August 19-20, 2006, approximately 400 metric tons of hazardous waste were secretly discharged at open-air sites around the city of Abidjan, Ivory Coast. At least 10 people died and 100,000 were sickened by the contamination, according to the country's health ministry. The ship carrying the waste was operated by the European company Trafigura and had previously docked in the Netherlands before departing for Africa in search of cheaper disposal, which was provided under contract by the local company Tommy (Lokongo 2006). A September 12 press release from UNEP describes the tragedy as an example of “illegal waste dumping” that the Basel Convention was created to prevent. Under the Basel Ban, EU law prohibits members from exporting hazardous waste to developing countries (UNEP 2006).

This analysis of news coverage focuses on whether major newspapers make the connection between the dumping incident and the existence of international law to prevent or punish such dumping, indicating how visible the law is within the media and its accessibility to the public.

English language newspapers

The story broke first in the West African and French news before gradually moving into the English language news. The story emerged in U.S. papers not as an environmental story but as

political news, due to the temporary resignation of Ivory Coast's transitional government following the tragedy, and as business news, due to the arrest of Trafigura executives when they traveled to Ivory Coast to investigate the incident. A search of 52 major English-language daily newspapers included *The New York Times*, *Wall Street Journal*, *Financial Times*, *Los Angeles Times*, and *Washington Post* between August 20 and November 20, 2006.¹

U.S. newspapers

In total, six substantive articles appeared in major U.S. papers, as follows:

- 9/8: The Seattle Times, in a city that is home to the Basel Action Network (BAN), ran a short, sympathetic story from Reuters *that mentions neither BAN nor the Basel ban*.
- 9/15: The LA Times ran a 754-word story on page 5, highlighting political unrest as a result of the tragedy. Neither Basel nor the UN is mentioned directly, but the second half includes this reference: "Greenpeace . . . questioned whether the dumping . . . may have violated a 1989 agreement banning industrialized countries from shipping toxic waste to poor countries." No background on this mysterious agreement is provided.
- 9/17, 10/2: The story first appeared in *The New York Times* as a political story about the formation of a new government in Ivory Coast following the waste scandal. Subsequently, the Times published a lengthy investigative article on the front page. The article is sympathetic to the victims and analyzes the potential culpability of various actors. Substantive quotations from Greenpeace and the Basel Action Network are included in the last section. That same day, the *NYT* featured the story in its "Quotation of the Day," quoting an outraged clean-up worker. Two days later, the *NYT* editorial board called for an end to toxic dumping on poorer nations, repeatedly calling for stronger international regulations to prevent such dumping. *Despite the sympathetic coverage, neither the Basel Convention nor the existence of a UN treaty is mentioned in the article or the editorial.*
- 10/25: A *Wall Street Journal* article focuses on the incident specifically related to international law, describing the Basel Convention and finally quoting UNEP, which was absent from previous U.S. reports. The article focuses on the enforcement problems of African nations rather than liability issues for industrialized nations. It is, however, the most thorough coverage in the U.S. press.

This analysis, while far from comprehensive, suggests several problems with public information available through the news media. It is understandable that the story would be covered later and more lightly in the U.S. press than the European press, as this particular incident did not involve the U.S. (*Time* and *Newsweek* did not cover the story at all.¹) *When the story is covered, however, global environmental treaties as well as UNEP are almost invisible.* While the press demonstrates sympathy, relying primarily on a victim-villain frame, the coverage suggests either ignorance or reluctance to acknowledge how the drama relates to international law (in this case, a treaty that the U.S. hasn't ratified).

European newspapers (appearing in English translation)

A more cursory search of approximately 400 European news sources in translation yielded 353 articles of which 22 mentioned the Basel Convention.² European papers carried the story earlier and followed it for a longer time than U.S. papers, with most coverage appearing in French sources. Among the articles mentioning Basel is a lengthy account in *The Independent*/ UK that describes the Basel Convention and quotes Greenpeace, BAN, and UNEP. (Selva 2006, p. 24) Similarly, the UK's *New Scientist* mentions Basel and potential for action at the COP8 in Nairobi in November. In comparison, the *Financial Times* initially published two brief items on a Dutch probe of the dumping and the arrest of Trafigura's president. Later, the FT's Abidjan correspondent frames the story as an African political scandal in an article entitled: "Toxic waste is the least of Ivory Coast's troubles: The government's response to a poisoning scandal in Abidjan has highlighted the fragility of a power-sharing administration." (Mahtani 2006, p. 6)

With some exceptions, European reports seem to display similar inadequacies to the U.S. media, despite greater proximity to the crisis and the EU ban on waste exports. While the story is more frequently covered, environmental treaties as well as UNEP are rarely prominent.

B. COP8 in Nairobi

COP 8 took place November 27 to December 1, 2006, with 120 governments meeting at the UNEP office in Nairobi, Kenya. While the conference was not intended to focus primarily on enforcement, it condemned the Ivory Coast dumping incident and agreed to develop a strategic plan to improve emergency response to such crises (COP8 2006). The agenda covered disposal and recycling of electronic waste, disposal of persistent organic pollutants such as DDT and furans, and ship dismantling. COP8 hosts its own website, linked to the Basel Convention and UNEP sites, and issued regular press advisories before, during, and after the conference.

Analyzing news coverage of COP8 proved to be a small task. A Lexis-Nexis search of major English-language daily newspapers including the *New York Times*, *Wall Street Journal*, *Financial Times*, *Los Angeles Times*, and *Washington Post* between November 21 and December 6, 2006, yielded no coverage at all.³ A search of English language magazines also yielded no coverage. (Concerned that the search engine was malfunctioning, I typed "Tom Cruise" into the keywords for the same time period and yielded 17 hits, including 2 articles each in *Newsweek* and *Time*, 1 in *BusinessWeek* and 1 in *Forbes*.)

A broader search of English language press beyond major dailies using the same parameters in the Factiva search engine yielded 47 articles between 11/21/06 and 12/6/06.⁴ It should be noted, however, that this coverage took place in minor papers, wire services, or industry publications. In all, 16 articles, most fewer than 300 words, drew a connection to the August dumping in Ivory Coast. Because the outlets were minor, further content analysis seemed inappropriate.

In summary, this brief analysis confirms the findings of the earlier one. With some exceptions, *the Basel Treaty is rarely prominent, if mentioned at all, in the mainstream media*, even in the wake of a dramatic, widely reported environmental crisis related to that treaty.

III. Improving Information for the Public

A. The Role of UNEP

The analysis of media coverage above suggests that the United Nations Environment Programme has a public relations problem, as does the Secretariat of the Basel Convention. They seem to be aware of this. This fall, the Basel Secretariat signed a memorandum of understanding with International Network for Environmental Compliance and Enforcement (INECE) to start a project to enhance public awareness of the Basel Convention, with a particular focus on working with civil society (Basel Convention Bulletin – November 2006).

Government environmental agencies from the Netherlands and the U.S. founded INECE in 1989 to improve compliance with environmental laws by raising awareness, developing networks, and building capacity for implementation and enforcement. The informal network now includes 4,000 members from more than 150 countries, including government, nongovernmental, and international partners. INECE is funded by the Netherlands, the U.S., UNEP, the World Bank, and the European Commission, as well as Environment Canada and the OECD (INECE 2006).

The goals of the INECE MOU are to increase public knowledge about the Basel Convention and promote the role of the Basel Convention Regional and Coordinating Centres, located in developing and transitional countries (Basel Convention Bulletin – November 2006). Increasing public knowledge is a critical goal and the initiation of this project is a good sign. *However, it has some problems and doesn't go far enough.* A major focus of the project is to enhance the reputation of the Basel Secretariat, which is more of a promotional goal, quite different from actually improving enforcement or public education to support treaty implementation.

The focus on the regional and coordinating centers, while useful in terms of capacity building, may place more responsibility for implementation on developing countries than industrialized countries.

Also, there is great risk that a campaign driven solely by UNEP and executed by a Dutch-U.S. funded organization may improve public relations for UNEP without necessarily improving implementation and enforcement.

The ship whose waste contaminated the Ivory Coast in August was operated by a Dutch trading company; the ship had previously docked in the Amsterdam, and Dutch port authorities faced criticism for allowing it to leave with its toxic cargo. In addition, the U.S. has never ratified the Basel Convention and is not party to the Basel Ban. Environmental agencies in both countries would benefit from positive PR related to Basel, but this is not the same as public education intended to improve treaty implementation.

An example of the delicate nature of public relations vs. public education can be seen in a press advisory on the Abidjan crisis issued by the Basel Secretariat on September 12. UNEP announces an investigation into whether the incident might be “linked to illegal exports from Europe.” No details are provided on the source of the contamination; the advisory does not mention the trading company, the name of the ship, or its host countries. An official comment

refers to building the capacity of developing countries to “prevent... environmental disasters caused by the illegal dumping of toxic wastes,” with no mention of the industrialized countries that generated the waste. In the 11th paragraph on the second page, it does state: “EU law implementing the Basel Convention prohibits all exports of hazardous wastes from EU members to developing countries.” (Basel Secretariat 2006, pp. 1-2) The careful presentation here suggests that Secretariat is carrying out its duty to inform the public while taking care not to accuse potential perpetrators within EU nations.

In short, the UNEP-INECE effort has both potential and limitations. Two major changes are needed to improve public education vis-a-vis environmental treaties:

- A broader concept of public education that goes beyond PR and crisis communications to adopt a social marketing approach that actually enhances public concern and political will to support implementation;
- Greater involvement by a range of civil society organizations working with but not necessarily under the control of UNEP.

B. The Role of Civil Society

Whose job is it to develop a public education strategy to enhance treaty processes? While this is an important role for UNEP, we see above that there are limits for political reasons. The role of civil society is also critical. Najam (2006) describes the current role of civil society as a catalyst. Both NGOs and UN agencies can use social marketing strategies to improve public education at key points, as could individual governments.

If UNEP is almost invisible in the news media, activists NGOs however, have a different concern. While they are trying to solve the same problem -- a lack of effective public information/education leading to a lack of public concern/political will/incentive to negotiate/implement treaties-- NGOs typically have less money, staff, and credibility.

The Seattle-based BAN, for example, uses both public education and news media outreach as components of a larger strategy to prevent exports of hazardous waste and promote implementation of the Basel Ban. BAN communicates with the news media through widely distributed press releases, usually linked to a BAN-generated “event,” such as the release of a report or a film. Press releases are issued after an external event, such as the Ivory Coast incident. The executive director, Jim Puckett, is well known and often interviewed at international conferences and events (Westervelt 2006).

The Ivory Coast story generated “a deluge” of media calls, according to BAN staffer Sarah Westervelt, most from outside the United States. Puckett attributes this to the lack of a domestic connection, the story emerging in French, the U.S. not being a party to the Basel Convention, and the U.S. public generally lacking interest in multilateral agreements. In an interview, BAN expressed strong interest in longer term marketing to shift public concern if staffing and funding were available. The organization has four staff members and no communications director.

Strengths of NGO public information include:

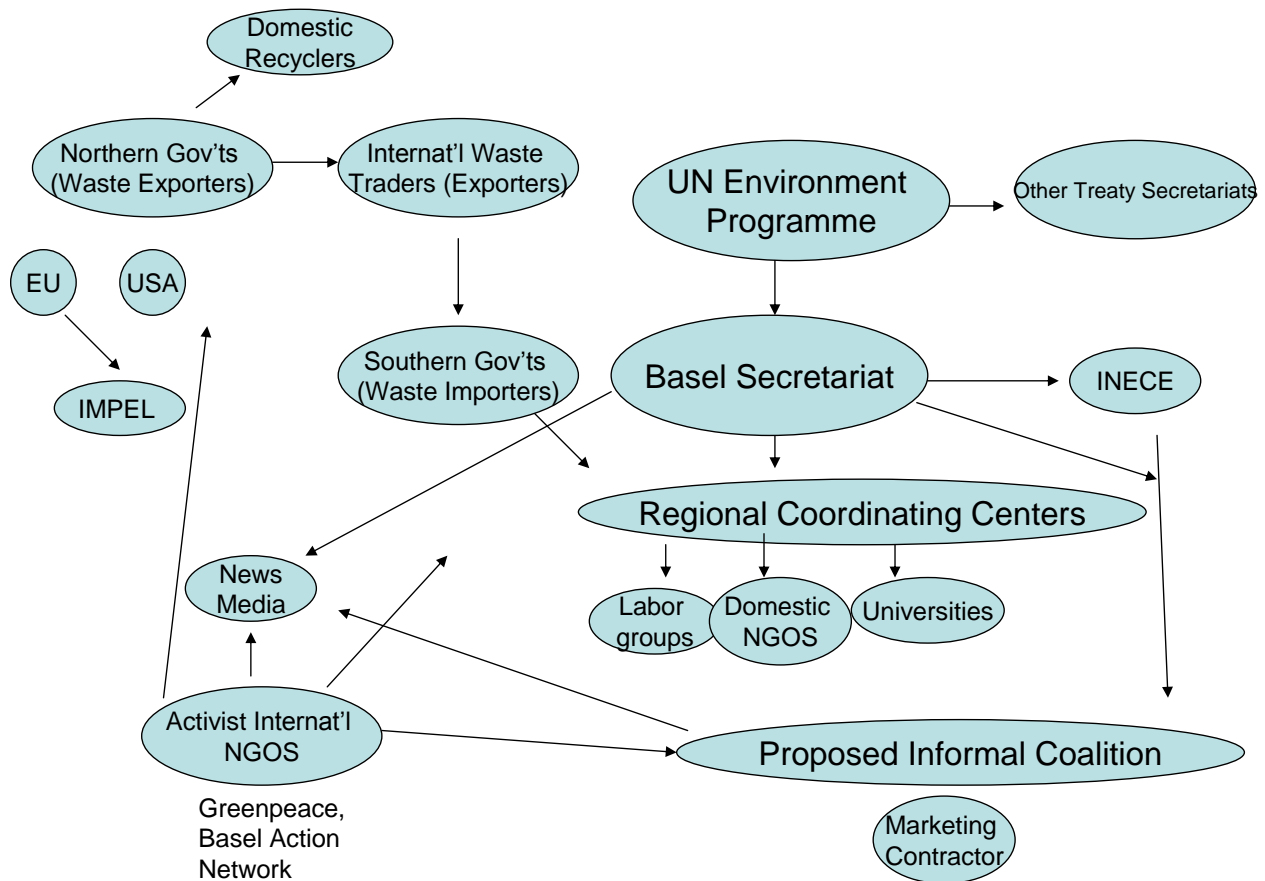
- Successful at getting campaign leaders quoted in news media;
- Extensive grassroots reach among left-leaning organizations;
- Attention-getting visuals;
- Responsive to community interest: BAN responds readily to a range of public speaking invitations. The organization conducts presentations for schools and the recycling industry and is developing high school/college curriculum on e-waste and shipbreaking.

Weaknesses of NGO public information include:

- Lack of credibility with general public and policymakers. Krewski et al. (2006) measured public confidence in organizations as information sources and found the top sources were medical doctors, university scientists, and news media (third), followed by friend/relatives. Public interest/environmental groups and industry were fifth and sixth.
- Communications tend to be crisis-oriented and present “hero-villain” frames.
- Lack of cultural sophistication and humor, with the result that earnest environmental information cannot compete with modern marketing by other sources.
- Lack of money and staff. Longer-term strategies to change culture take a backseat to more immediate communications.

To maximize the strengths and minimize the weaknesses of both the UNEP-INECE partnership and the NGO community (BAN, Greenpeace, and other civil society actors), I propose an informal coalition of the two camps to provide public education and divide up appropriate tasks. Two ways to do this would be to draft an MOU with a broader range of actors than just INECE or to jointly hire a social marketing company (such as the Defra Company, which conducted a highly successful campaign in the UK on climate change). This action would be timely given the Basel Secretariat’s recent statement about working with civil society. Yet, it is critical that NGOs maintain their independence in determining the content of public information offered. Likewise, the Secretariat and INECE would likely need to maintain some distance from any controversial aspects of a public education effort.

Figure: Actors in the domain of international hazardous waste/Basel Convention



IV. Components of a Public Education Campaign

The preceding analysis suggests that traditional news media are failing to educate the public about the Basel Treaty, and perhaps global environmental treaties in general. While media coverage is still needed and efforts to improve coverage are worthwhile, a broader education strategy may be appropriate to reach different levels of the public directly.

Social marketing offers a means of informing citizens, both policy elites and less politically engaged people, by going around the media to communicate directly in ways that are effective and influential; interestingly, such efforts may in turn attract media attention. The creators of social marketing, Philip Kotler and Ned Roberto describe social change campaigns as “an organized effort conducted by one group (the change agent) which attempts to persuade others (the target adopters) to accept, modify, or abandon certain ideas, attitudes, practices or behavior.” (Kotler, Roberto and Lee 2002) Thus, social marketing models (Kotler, Roberto and Lee 2002; Frahm 1996) recommend a methodical approach to induce behavior change in a target audience. While these models tend to focus on community-based campaigns, often for the purpose of

health promotion, the steps are also useful in thinking through a larger campaign focusing on international environmental issues. They include:

Define objective: The purpose of this public information campaign is to increase public concern and political will in industrialized nations, particularly the U.S., regarding the hazardous waste trade and implementation of global regulations. The ultimate goal is for the U.S. to ratify the Basel Convention and the Ban Amendment and to participate in implementation and for OECD countries that have already ratified to abide by the ban.

Select your audience: For purposes of this proposal, the audience is the American public, a very large target by social marketing standards and a relatively small one considering the global focus of the Basel treaty. The audience can be segmented in many ways, perhaps most usefully according to existing level of knowledge about environmental issues (elite vs. nonelite).

Address the audience's barriers to change: Barriers may be external (e.g., cost, technology) or internal (e.g., lack of knowledge or urgency). Numerous barriers exist to the U.S. ratification of the Basel treaty and this effort would attempt to address only the internal ones: the public doesn't recognize the problem and doesn't consider it a priority.

Tailor key messages: When you provide information to your target audience, it should be vivid, personal, concrete, emotional, and told as a story. Role models are a valuable means of conveying the message (Frahm 1996).

In terms of delivering key messages to Americans previously unaware of or unconcerned about the Basel treaty, popular culture offers one venue for reaching people with vivid, emotional narratives with the participation of popular role models. In fact, in his analysis of environmental disasters as regulatory catalysts, Kahn (2006, p. 27) mentions that “[a]n additional source of plausibly ‘exogenous’ catalytic environmental events is popular culture and scientific discoveries.”

A. Public Education Through Popular Culture

Implementing a strategy involves communicating directly with the public through popular channels, either bypassing the news media or gaining their attention through creative methods. Croteau and Hoynes describe the Hollywood-ization of the media, with celebrity news and movie tie-ins increasingly dominating broadcast news and book publishing in particular. Rather than trying to change or eschew this culture, public educators need to utilize it to reach the public with messages about the environment. In fact, one analysis of American public opinion on international affairs actually linked exposure to soft news sources [as opposed to traditional media] to greater engagement by otherwise uninformed citizens (Baum 2002). While neither a blockbuster film nor lightweight coverage on daytime talk shows can be expected to create permanent change, it is possible that such information would help to create a temporary environment of public will to effect some changes.

A broad-ranging campaign would include the kinds of elements described below, potentially including: a celebrity spokesperson for the environmental treaty and the problem it aims to solve,

a proposal for a Hollywood movie on the topic, television coverage in “soft news” formats, a computer game, and finally, inclusion in “Science Café” presentations around the U.S. The first three items would reach an otherwise disengaged audience, those with little to no knowledge of global environmental issues or international law; the computer game reaches a younger generation with potential to engage them; and the science cafes reach a more elite audience to build the knowledge base and create greater urgency. Components of a campaign would be phased in and developed as follows:

Celebrity Spokespersons

The Basel coalition, described earlier, should recruit a credible spokesperson to increase public awareness within the American public. This would be an appropriate activity for the Basel Secretariat or INECE, as it would largely entail positive activities. For the mass media, the ideal spokesperson would be a prominent, photogenic, nonradical, celebrity mother who focuses on the importance of protecting human health through proper waste disposal and good corporate citizenship. Past and present examples include Princess Diana working on the landmine ban, Angelina Jolie serving as a UN goodwill ambassador, and Drew Barrymore’s involvement in the UN World Food Programme.

Initial approaches to potential spokespersons could be made to or through celebrities already involved in environmental causes and the organizations with which they have established relationships. PR companies often have experience initiating these sorts of contacts so the Secretariat or INECE might issue a contract (for which costs would mainly include staff time). Ways to do this include:

- Work through the Los Angeles Chapter of the Public Relations Society of America. In the U.S., many NGO communications professionals have ties to PRSA, or could easily establish them.
- Approach celebrities already active in the environmental movement for assistance and contacts. For instance, Leonardo DiCaprio has worked with the Natural Resources Defense Council and several other environmental groups through his own environmental foundation. Robert Redford and the president of Warner Brothers are also members of the NRDC board. Other possibilities include Julia Roberts and Ed Begley, Jr., both of whom have served as spokespersons for environmental causes.

Dumping on Ivory Coast: The Movie

Coalition members should also try to promote the creation of reasonably plausible environmental crisis movies, such as *Erin Brockovich* or *A Civil Action*. The first, starring Julia Roberts, dramatizes the true story of a small town single mother who helped lawyers win a major settlement against California’s Pacific Gas & Electric Company after contaminated drinking water was linked to residents’ illness in 1993. The second, starring John Travolta, dramatizes Jonathan Harr’s 1998 book about a class action suit between residents of Woburn, Massachusetts, and the companies whose pollution is linked with cancer among the town’s children.

The goal would be to tell a story that is important to the public in a respectful way, steering a path between overblown ecological disaster movies such as *The Day After Tomorrow* (inaccurate, hysterical global warming movie released May 2004) and an intellectually earnest, arthouse documentary like *An Inconvenient Truth*. BAN has produced two of its own documentaries on the transport of hazardous waste, which might serve as source material, but they lack the broad impact of a popular film.

Proposing a movie idea would be appropriate for an NGO, as it would be an unlikely activity for a UN organization funded directly by governments who may bear some responsibility for environmental contamination. The only cost is staff time to develop a movie pitch; if successful, the NGO would lose control of the story, which is a potential risk. Proposing the story through a sympathetic middleman would be critical.

There are several ways a staff member or intern at an NGO could develop and deliver a pitch, including working with the LA PRSA, as mentioned above; approaching through an existing spokesperson or celebrities already active in the environmental; or by sponsoring a competition among aspiring screenwriters at a film school such as the American Film Institute (Los Angeles) or Northwestern University. (Grant funding would be needed.)

The promotion of a hazardous waste movie would then provide opportunities for key actors and NGOs working on the issue to raise public awareness through television, radio, and print media. For instance, Leonardo DiCaprio's recent film, *Blood Diamond*, has generated public debate about labor standards and other issues in the diamond mining industry (Foote 2006). The end result is to raise consciousness among affluent consumers about the consequences of their consumption for poorer countries.

Transboundary Movements of Hazardous Waste: The Video Game

The United Nations World Food Programme features a highly popular educational computer game known as Food Force in which teams of players compete to deliver food aid into a war zone on the fictitious island of Sheylan. Designed to help children aged 8 to 13 learn about world hunger, the game has attracted widespread media attention and more than four million players in the last four years (UN WFP 2006).

Food Force includes six challenging missions, in which players learn to conduct a crisis assessment and then plan, deliver, and distribute food aid, overcoming typical obstacles along the way. By playing the game, participants also learn more about the scope of world hunger, afflicted populations, reasons famines occur, and potential solutions, including the role of food aid in crisis and longer term development situations.

Food Force is the first of numerous "activist video games" designed to educate youth to solve real global problems. Similar products include MTV's "Darfur is Dying," which hosted 800,000 players between April and August 2006, as well as "Peacemaker," a program that allows children to try resolving the Israeli-Palestinian conflict (Batchelder 2006).

Approximately 60 percent of Americans play computer or video games, with an increasing number of games focused on “edu-tainment” on serious topics such as the environment. This includes Environmental Detectives, developed by MIT and Microsoft, and NitroGenius, designed for the Dutch Ministry of the Environment to focus on nitrogen pollution (U.S. EPA 2004).

Based on these models, UNEP should create a computer game tie-in for key environmental problems, timing introduction of a game strategically with the scheduling of treaty negotiations, such as COP9 in 2007. Two possibilities for themes include:

1. A game focused on one specific treaty and the environmental problem for which it was created. For instance, a hazardous waste/Basel game might include a scenario on how to act if the player was a president, prime minister, or environment secretary of a nation and had a ship filled with unknown hazardous material headed for his or her port. How would he/she dispose of the waste safely while weighing the costs of clean-up, international law, and his/her country’s relationship with business and trade organizations? Fictitious characters within the game, or other players, would represent the other parties, such as the waste trader, the exporting company, and the Basel Secretariat.

2. A computer game could also focus on the treaty negotiation process itself, with different participants representing the various parties and interest and working online to reach agreement on a convention, protocol, or amendment. This kind of game would be more appropriate for older children (12+) as it would be similar to a negotiation exercise or virtual “Model United Nations,” such as is conducted with high school and college students. (Prototypes of this kind of UN computer game already exist and may simply need to be marketed more widely to have a greater influence.)

An NGO such as BAN might also be able to attract grant support for the creation of a game. The John D. and Catherine T. MacArthur Foundation is reportedly interested in the educational uses of gaming, as noted in *The Chronicle of Philanthropy* (Wilhelm 2006, p49). There has also been discussion about creating an agency similar to the Public Broadcasting Service to support gaming with social value.

An argument for the educational value of computer games comes from author Steven Johnson (2005): Unlike older video games that required only fast reflexes and motor skills, complex modern games teach users about "constructing the proper hierarchy of tasks and moving through the tasks in the correct sequence . . . It's about finding order and meaning in the world, and making decisions that help create that order." In the case of “do-good” games, they provide the next generation with intense, often collaborative, practice in negotiating the kinds of problems that adults in the real world frequently fail to solve.

A successful “do-good” computer game can also generate media coverage for an issue. Neither *Time* nor *Newsweek* covered the Ivory Coast dumping incident, but *Time* did publish an article on “Do-Gooder Games,” featuring Food Force. In addition, the game generated coverage by the *New York Times*, *USA Today*, the *San Francisco Chronicle*, Reuters, Gannet News, Canada’s

Globe and Mail, MSNBC, *the Chicago Tribune*, the Associated Press, CNN, the BBC, and the UK's *Independent* (UN WFP 2006).

Science Cafes

Beginning in the late 1990s, science cafes started becoming popular in the U.K. as an informal, interactive way for everyday citizens to learn about science in a comfortable setting. Known as "Café Scientifique," the open meetings now take place in coffee shops, bars, bookstores and on college campuses in the UK, France, and the U.S., including clubs in New York City, Denver, Seattle, Syracuse, and Pittsburgh.

Science cafes are one way to disseminate substantive information about environmental problems and regimes. There are several ways that information on the hazardous waste trade and the Basel Convention could be injected into science cafes in the U.S. and EU countries.

Seattle research scientist Gretchen Meller has organized science learning events at local bookstores. Her reasoning: "If the general population is to vote on these issues eventually, they need the opportunity to ask questions." (Café Scientifique website, 2006)

Organizing and Funding:

Because science cafes already exist in OECD countries, the main goal of a UNEP effort would be to reach café coordinators and arrange speakers on treaty-related topics. While the focus here is Basel/hazardous waste, it would be more efficient for UNEP to coordinate speakers on a range of treaty topics on an ongoing basis. UNEP or Secretariat staff or a designated partner (e.g., INECE) would attempt to schedule speakers appropriately with treaty actions; for instance, Science Cafes in October and November 2006 would have focused on Basel prior to the COP8. Both the U.S. and the UK have national science cafe networks, which would help expedite scheduling.

Funding possibilities include corporate or foundation funding or local options. In Britain, foundation funding from the Wellcome Trust supported hiring a national coordinator to expand the café movement. In the U.S., the scientific research society Sigma Xi has worked to organize the movement on a national level. In addition, local sponsors (such as universities and the cafes themselves) can provide funding to coordinate speakers. In the U.S., some science cafés receive funding from corporations or schools, while a few charge attendees \$5 to \$10. Another possibility would be for UNEP or its partners to provide funding through regional NGOs such as Sigma Xi.

Media coverage: While media attention is not the goal of science cafes, their emergence has attracted coverage in the *New York Times*, *The Japan Times*, *The Sacramento Bee*, *Science* magazine, *The New Scientist*, *Vogue* magazine, *The Guardian*, ABC News San Francisco, trade publications (both high-tech and for the café/bar industry), and various radio/print outlets in the UK and U.S. This kind of media coverage can expand the reach of café discussions to increase public awareness of the topics under discussion. Toby Ferenczi of Cambridge University's *Varsity* newspaper commented: "Café Scientifique is an organisation which tries to take science

away from the bum-numbing chairs of the classroom and into big, fluffy sofas . . . It tries to play a role in promoting public engagement in science; making it accountable, because science is no longer for the scientist alone.” (Original article in Cambridge University’s Varsity newspaper, May 2002, quoted on Café Scientifique website 2006, no page number available).

B. Evaluation: What Would Success Look Like?

If a lack of public education on environmental regimes is the problem and the American public is the target audience to create greater awareness and concern, how will we know if the problem is solved through efforts to increase information in popular culture?

- There will be increased public discourse and visibility on this issue in mainstream media. It is difficult to connect the popular currency of a topic with actual changes in treaty effectiveness, but there is arguably a link to public concern. When a problem is highly visible and constituents are talking about it, lawmakers are more likely to act.

- There will be an increase in news coverage related to treaties in major news outlets in the U.S. and Europe. If a dumping incident occurs, it will be reported promptly and widely and the treaty will be mentioned in the story. In fact, there will be more, rather than less, news coverage of violators of the treaty. A public education plan is not an enforcement program; UNEP needs a host of other changes and more funding to improve enforcement, which would be better supported by a shift in public awareness.

- There will be increased public pressure for the U.S. to ratify the Basel Convention and the Basel Ban. To date, the United States is the only OECD country not to ratify the Basel Convention. While this is an ambitious goal that cannot be accomplished by public education alone, it is possible that increased public awareness, in the context of a Democratic majority in Congress, might at least bring the treaty to a vote. (Some environmental groups are concerned that the new majority might pass the convention without the ban amendment, so the occurrence of the first without the second might not be viewed as success.) (Kyle 2006)

V. Conclusion

Any public education campaign can be effective only if it accompanies a more substantive effort to improve implementation and enforcement of environmental regimes. That said, effective, creative education can help create an environment that supports stronger implementation and enforcement measures. Citizens cannot support change if they are unaware that a problem exists. While increased visibility on Basel, Kyoto, or any treaty does not guarantee that improvement will occur, a lack of visibility almost guarantees that it will not.

In this analysis, we have glimpsed a snapshot of how traditional news media fail to meet the challenge of informing the public about the Basel Convention. While greater coverage should be encouraged, this gap provides an opportunity for new approaches to public education, especially as newspaper readership continues to decline. Pop culture provides diverse routes of communication to reach citizens at different levels, both the ‘cognoscenti’ and the mainstream public, through the kinds of strategies outlined here. In fact, a two-tiered strategy is appropriate:

a straightforward route of providing credible information to the news media in a push for more substantive coverage as well as a more creative, diversified strategy of social marketing to reach a wider public.

Basel is an example of an environmental regime that keeps falling forward but has never achieved the effectiveness of the Montreal Protocol. Simultaneously, the illegal international waste trade recently culminated in a provable, fatal catastrophe in Ivory Coast. These conditions match those described by Zartman, who refers to “‘ripe moments’ in the life of a conflict when resolution is more likely to come than at other times. A key element in such a moment is a mutually hurting stalemate combined with a recent or impending catastrophe.” (Zartman 1992, p. 114) Given these conditions, the time appears ripe for a public education campaign on the Basel Convention.

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¹ As noted in Lexis-Nexis searches under General News, Magazines and Journals, for the terms Ivory Coast AND waste in all text, 8/20/06 – 11/20/05. Search was repeated in Academic Search Premier/EBSCOHOST with the same parameters, for periodicals.

² Search was conducted in Lexis-Nexis, under the headings World News and European News Sources, with the search words "Ivory Coast AND waste AND toxic" in the full text between 8/20/06 and 11/20/06. These search parameters yielded 353 articles and a search within the text of the articles indicated that 22 of them mentioned the Basel Convention.

³ Search took place under General News, Major Papers, for "Basel AND Nairobi" in full text. The start date of 11/21 was chosen to avoid duplicating articles from the previous search.

⁴ The news sources covering the COP8 as follows by country of origin: New Zealand/Australia 3, Europe 10, Africa 9, Asia 6, UK 10, U.S. 6, Canada 3.