

**Continuity and Change in Environmental Regulation and  
Hazardous Waste Management among the Industrialized Countries**

(Concluding Chapter of *Waste Trading among the Rich: Forging a New Theory of  
Environmental Regulation*, MIT Press, Forthcoming)

**Kate O'Neill**

**Assistant Professor**

**Division of Resource Institutions, Policy and Management  
Department of Environmental Science, Policy and Management  
University of California at Berkeley  
207 Giannini Hall  
Berkeley, CA 94720-3310**

**E-mail: [koneill@nature.berkeley.edu](mailto:koneill@nature.berkeley.edu)**

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Chapter 7**Conclusion**

This project set out to establish whether or not key procedural differences between national systems of environmental regulation can explain why some countries, industrialized democracies in every case, should - in the absence of coercion - willingly take on the risks of disposing of hazardous wastes which other countries do not want. The waste trade is a highly risky activity, associated strongly with environmental damage, market failures, and issues of equity and social justice, the predominant theme in the literature on the trade so far. The movement of wastes across national frontiers is agency-driven: deliberate decisions are made by waste disposal firms to accept foreign wastes for disposal, and by the government agencies which issue waste importation permits or otherwise allow hazardous wastes to enter the country. At the same time, waste importation, along with many other issues concerning hazardous waste management, is often strongly opposed by a wide range of forces, usually including environmental groups and the weight of public opinion.

Despite these risks, empirical examination reveals a wide array of different behavior across OECD countries: some are large net importers of wastes, while others are net exporters, with a variety of practices in between. Britain and France are the world's largest two net importers of hazardous wastes, positions they have maintained since waste trade records began in the mid-1980s. Germany and Australia, on the other hand, are both exporters: Germany is probably the world's largest waste exporter, Australia much less so. Finally, Japan is the country that comes closest to autarky with respect to the waste trade. These differences hold despite broadly similar preference configurations among the various stake-holders in the waste trade

across these countries, and despite the absence of significant differences between their relative economic positions or their membership and/or stated support for the relevant international agreements and regimes.

The following part of this chapter summarizes the main insights and results of this study, demonstrating how an explanation based on regulatory differences is superior to alternatives. The second part examines the broader implications of this argument for studies of international and comparative environmental policies. Part III pushes the conclusions beyond the comparative and into the dynamic, examining how regulatory changes at the national level, especially those originating from international or transnational sources are dealt with in different approaches. It examines how an institutional approach that recognizes the role of agency helps in interpreting institutional change in the context of European integration. Part IV addresses how the international waste trade regime is likely to evolve, and at prospects for banning the trade. It also addresses how a changing public-private balance worldwide in hazardous waste management is affecting the trade, and some of the lessons industrialized countries are showing evidence of learning. Finally, some policy prescriptions arising from this work for the developed countries are discussed, being careful to bear in mind the difference between *causal* variables - of most interest to social scientists - and *malleable* variables, of more interest to the practitioner. The hard part is to work on the latter in the context of wider, less malleable but nonetheless important variables.

## **I. The Results: A Summation**

### **1. The Contending Explanations**

Three contending explanations were identified to account for differences in waste trade practices. The first was based on rational cost-benefit calculations by state actors - the "economic nationalist", or "financial incentives" explanation (based on Montgomery, 1992), the second on comparative levels of disposal technology, and the third on institutional factors: differences between national styles and structures of environmental regulation. Figure 7.1 (at end) lists the arguments tested for each.

First, the economic nationalist explanation proved problematic on a number of grounds, as demonstrated in the context of the British case. Calculating and quantifying the relevant costs and benefits, and how they are distributed among different actors is almost impossible, given the vast differences between private and social assessments of associated risk. Hence, while there are certainly large financial gains to be reaped from importing hazardous wastes, it is uncertain whether or not these outweigh the social costs of waste importation, costs that eventually fall on government shoulders.<sup>1</sup> More basically, this argument does not stand up to comparative analysis on its own terms: it cannot explain why different countries - Britain and Germany for instance - make such different cost-benefit calculations on the basis of ostensibly similar levels of risk. In fact, Germany, with its higher levels of disposal technology and higher potential profits from providing waste disposal services, should be more inclined to allow waste importation than Britain, which was shown to have vastly inferior - and hence cheaper - disposal facilities. However, this was not the case.

The second part of this argument - that rational, unitary state actors are able to arrive at these decisions autonomously of social pressures - is also problematic. In most cases, waste importation decisions are not the result of decisions made by a single official actor; rather, they

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<sup>1</sup>These social costs include the actual or perceived environmental harm imposed on local communities and ecosystems, and the longer term economic costs of cleaning up contaminated and abandoned disposal sites.

are often taken by multiple regulatory agencies and/or levels of government, agencies that may or may not be subject to pressures from many different societal actors.

The comparative advantage argument also proved to be of limited explanatory power here. It posited that advanced industrialized democracies import hazardous wastes on the grounds that they have both adequate spare capacity, and superior disposal facilities in terms of their ability to deal with extremely toxic substances more safely and speedily than their exporting partners. Across the board, arguments about spare capacity do not hold: in each and every case, government agencies and environmental groups report that hazardous waste disposal capacities are under extreme pressure, with the possible exception of Germany, where disposal authorities are beginning to report that many facilities are indeed under-utilized.<sup>2</sup> All OECD countries are having severe problems siting and constructing new facilities, due to both societal and economic constraints.

The technology argument required further empirical examination. Results showed that in the two importing countries - Britain and France - disposal facilities are in fact alarmingly inferior. This observation held most strongly in the British case, where the main disposal route for hazardous wastes and residues is in fact landfill, and where incineration facilities are considered inferior to those in many other West European countries. The low disposal costs associated with these routes make these countries attractive destinations for waste exporters. However, they cannot explain why the authorities in these countries continue to allow waste imports, given the level of risk imposed on local populations, and the high probability of substantial clean-up costs in the not too distant future. Germany, on the other hand, offers relatively high levels of disposal technology, yet authorities there (despite some evidence of

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<sup>2</sup>This observation holds across other OECD countries as well: see Yakowitz, 1993.

industry support for this idea) show little willingness to import wastes from countries less able to deal effectively with them. Australia, finally, is something of a special case: it almost entirely lacks adequate facilities for dealing with hazardous wastes. While such facilities have been proposed at various times, high levels of societal opposition influenced federal and state governments to halt the development and construction of such plants.

## 2. The Institutionalist Account: Regulatory Structures and Styles

The effectiveness of societal opposition in Australia lends additional support to the most powerful explanatory account: that differences in waste importation practices can be traced to differences between national styles and structures of environmental regulation. In turn, these differences at the international level help explain certain patterns of waste trading among OECD countries. Two features of countries' systems of environmental regulation determine waste importation patterns: their regulatory *structure*, (the allocation of waste management and regulation responsibilities among agencies and levels of government and the structure and ownership patterns of the waste disposal industry) and their regulatory *style* (how state-society relations are played out in policy formation and implementation). This study identified two indicators of regulatory style. First, *access* to the policy process can be achieved via inclusion in the environmental policy community or through access channels afforded by a country's broader political opportunity structure. Second, its mode of policy *implementation*, depends on whether policy standards and goals are implemented on a rigid, across the board basis, or on a more flexible (ad hoc), case by case basis.

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This is an institutionalist explanation; hence the empirical analysis needed to demonstrate how these features constrained and/or facilitated the behavior of the relevant actors in such a way as to determine national waste importation propensities. The hypotheses listed above generated a two-fold argument. First, certain types of regulatory structure - notably, the highly diffuse structure exhibited by Britain - vastly complicate the monitoring problems facing policy makers at the center seeking to control, or at least coordinate waste importation practices. Second, these regulatory features determine certain patterns of access to the policy process. In some cases, they filter out broader societal preferences in favor of industrial interests. In others - notably where waste importation does not occur - they enable a wide range of actors to influence policy decisions and outcomes. Overall, these three factors combine to determine whether or not a country has a regulatory climate permissive of the importation of hazardous wastes by (usually) private actors; alternatively whether a country exhibits risk acceptant or risk averse behavior with respect to waste importation.

The results across cases are summarized in Figure 7.2 (at end). The two primary case studies were Britain and Germany. Britain fits the profile of a waste importer. A highly competitive, privately held waste disposal industry dominates a policy process that tends to exclude the views of the general public and of environmental groups. This process of exclusion occurs not only within the "corridors of Whitehall" - the environmental policy community - but also through Britain's first-past-the-post electoral system and its lack of independent processes of judicial review. It reflects a long-standing tradition of cooperation between industry and government actors in the formation of public policy (Vogel, 1986). Furthermore, powers of waste management are dispersed among many local regulatory authorities which themselves have very little capacity to monitor the activities of firms under their jurisdiction, even though

they, and not central government, have the authority to issue waste importation permits. There are few clear channels of communication between central government and local authorities, and their relationship has traditionally been highly conflictual. These problems have complicated the waste importation issue, to the extent that the Westminster authorities have been unable to implement a ban they announced on waste importation in 1991. This factor is compounded by a mode of policy implementation that gives industry a large amount of discretion in setting and meeting environmental goals and standards. While Chapter 4 showed that these authorities are beginning to consider alternative strategies for dealing with this problem, progress towards this goal remains slow.

Germany's system of environmental regulation contrasts with Britain's in almost every respect. First, relationships among the various constituent units of its regulatory system are much more structured, and the structure of waste management in the Federal Republic is much more centralized. There are fewer regulatory authorities in charge of waste management (these are located at the Land level), and the waste disposal industry is either publicly owned and run or subject to high levels of government intervention and scrutiny. These factors alone mitigate the sorts of principal-agent problems which plague the British system. There are also many more points of access to the policy process in Germany. The electoral system, for example, has allowed the German Greens access to the national parliament, thus forcing the more established parties to take on board environmental concerns. There is also evidence that the policy community is opening up to include not only industry and scientific experts (the latter a category excluded in Britain), but also a wider range of societal interests. Finally, Germany has a famously rigid policy implementation style, based on risk-averse calculations of polluting effects (the "precautionary principle"), which gives industry very little leeway in determining its actions.



The high level of legitimacy accorded to the German mode of state intervention in the actions of its constituent firms has also allowed Germany to develop and to implement an extensive program of industrial waste minimization, embodied in the Kreislaufwirtschaft ("Closed Circle Economy") ordinance.

Thus, empirical analysis of Britain and Germany's environmental policies bears out the hypotheses developed about the effects of regulatory differences on waste importation propensities. Chapter 6 then showed how this model can be applied to other OECD countries, looking at France, Australia and Japan. The first two cases again bore out the regulatory explanation. The most important factors in each were regulatory structure and access to the policy process. In France, for example, the ambiguities surrounding the delegation of environmental responsibilities to the relatively new regional tier of government has made it much harder for government actors to control the actions of importing firms. The closure of the policy process to interests opposing waste importation also contributes to the problem. The French government, too, is now following the British government's lead in developing a package of fiscal incentives to help stem the influx of imported wastes and to discourage the use of landfill as a primary mode of disposal.

Australia has the most centralized waste management structure of the cases examined here. Even though it has a federal system of government, the sorts of industrial activities generating hazardous wastes are concentrated in two states, Victoria and New South Wales, and most existing waste storage facilities are in Sydney, the capital of New South Wales. The most interesting feature of this case concerned the debate surrounding the construction of a national facility for waste incineration. The effectiveness of opposition to this plant demonstrates its relatively open-access system. Australia, too, of the cases here, is giving the most consideration

to the development of "alternative" modes of waste disposal, ones usually considered to be more environmentally sound.

Finally, Japanese waste importation practices presented an anomaly for this model. While the Japanese regulatory system mirrors that of Britain in many respects, it is not a net importer of hazardous wastes. This result can be related primarily to the continuing impact of several pollution scandals which came to light in the late 1950s and early 1960s, and whose effects, in terms of victim outrage and compensation cases, continue to resonate today, fostering a risk averse attitude to importing hazardous substances. The long shadow of these events can be ascribed to institutional factors, but to different ones than identified here. More specifically, analysis showed that the structure of the Japanese waste management industry - practically of perfect competition - is not at all conducive to waste importation. Separate firms carry out waste collection and disposal activities, and there are no large waste disposal firms in Japan of the sort that import wastes in Britain and France.

In sum, the regulatory argument works well as an explanation of why some countries import more hazardous wastes than do others. Not only does it perform better than alternative accounts, but is also applicable across other OECD countries. The regulatory systems examined in the case studies have been relatively durable over time; pressures for change have targeted perceived national needs, structure in Britain, waste minimization in Germany and technology in Australia. That these regulatory systems have been relatively durable strengthens the argument in favor of the existence of institutional constraints on national actors. As data currently limited in scope becomes more readily available, as progress is beginning to be made towards monitoring waste generation and disposal trends and harmonizing national definitions, extension of this argument to other cases will become possible.

## II. Theoretical Implications: Generalizing the Argument

### 1. International Environmental Politics

There are many links between domestic and international political processes with respect to global environmental issues, yet to a great extent they remain under-explored in much of the literature so far. Domestic regulatory policies are, as many authors have pointed out (e.g. Mitchell, 1994), vital for the effective implementation of international environmental agreements and indeed for other sorts of international regulatory agreements. Hence detailed analysis of the different national responses to questions of environmental degradation yields much that is useful for understanding these processes. Chapter 1 raised two issues which the field has not yet adequately addressed: the political factors which underlie global environmental degradation, and the issue of defining and measuring regime effectiveness, both of which can be addressed within a domestic regulatory framework.

To understand how states respond to (and how they might contribute to) environmental degradation, both local and international, it is often necessary to look beyond questions of regulatory capacity or effectiveness. The countries examined in this study are all roughly comparable in terms of their overall levels of success in tackling key environmental problems. Instead, the important differences between them are *procedural*. Differences in the ways states deal with environmental issues can be seen at all stages of the policy process, as the above summary of results demonstrates.

Other important institutional differences can be derived from the foregoing. For example, inter-agency relations - part of a country's regulatory structure - matter. In Britain, France and

Japan, the environment ministry was marginalized in the political process; this was far less the case in either Australia or Germany.<sup>3</sup> That countries tend to frame waste management as a local, rather than an international issue also determines how they view the key problems involved. Finally, differences in modes of implementation helped determine the amount of leeway afforded to industry in their actions regarding environmental protection.

Different national responses to environmental issues are brought to bear in international negotiations and in subsequent implementation of resulting agreements. At the Basel Convention negotiations, the OECD countries differed notably in their approaches towards wastes destined for final disposal versus those destined for recovery, and countries with the most powerful domestic waste industry lobbies were much less in favor of imposing a ban on waste trading. More importantly, regulatory differences can have an important impact on both how and how well countries implement international environmental commitments, as for example Britain's pledge to end hazardous waste importation. Therefore, an understanding of how different national modes and styles of regulation work helps us to predict the likely effectiveness of a given agreement (see discussion of the Basel Convention, below). It also addresses the issue of how to operationalize or measure regime effectiveness in the absence of data on environmental changes as a result of the agreement in a way that goes beyond merely assessing state compliance.<sup>4</sup> For example, if there is little adaptability in either the agreement (to national differences) or the national regulatory system (to the terms of the agreement), then it is unlikely that the agreement will be effective. Alternatively, if the agreement imposes conditions that are

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<sup>3</sup>See also Weale et al, 1996 on national environment ministries.

<sup>4</sup>This corresponds with Young's notion of procedural effectiveness (Young, 1994).

impossible for a state to carry out, given the nature of its regulatory system, again the agreement is unlikely to be effective.

This sort of mid-range theoretical approach can be generalized to other international environmental issues and agreements, allowing an understanding of how countries implement the terms of an agreement, and how governments seek to control the actions of the private individuals and firms under their jurisdiction. Chapter 2 identified several key characteristics of hazardous waste management as an international issue. It is a local-cumulative issue with important transboundary spillover effects, and there is a high degree of agency in the transmission of the problem across national frontiers: a small group of relatively identifiable actors take actual decisions to ship wastes to other countries. Highly comparable issues would for instance be the international timber trade, nuclear waste disposal, and illicit CFC smuggling.<sup>5</sup> Nuclear issues, for instance have been especially volatile in all of these countries in the late 1990s, as each grapples with nuclear waste transportation and management issues which have, in the advent of several high profile cases become highly international (O'Neill, 1999).

## **2. Comparative Environmental Policy**

This theoretical approach is derived from and extends the tradition of institutionalist analysis in the study of comparative public policy. Several broad implications of this work can be identified. First, the empirical work and methodological approach emphasize the extent to which hazardous waste management practices are embedded not only in wider rules and practices of environmental regulation, but also in much broader institutional structures, such as

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<sup>5</sup>This issues are "highly" comparable in the sense that it would be possible to employ an extremely similar methodology in explaining them through identifying the main stake-holders and their preferences, then tracing out how they go about achieving these in the context of regulatory restraints and/or opportunities. See Clapp, 1998 on the illegal CFC trade.

the country's electoral system and polity type. This work developed a framework that can be relatively easily applied across a wide range of countries, despite the differences between them.

Second, polity structure - whether a state is federal or unitary - was found to have a significant impact on waste trade and management practices in ways that are often counter-intuitive. This is a complex issue area, with local, national and international ramifications. In general, federal systems, here, in Germany or Australia, tend to have clearly defined and accepted divisions of power and responsibilities among different levels of governments. This means that they are much better at overcoming some of the monitoring and coordination problems inherent in coping with complex, multi-level and environmentally risky activities than are unitary states. In Britain or France, environmental powers tend to be devolved to poorly resourced local tiers of government whose legitimacy (or social base) is correspondingly weak. It is also likely that the insights derived from this study of the waste trade could also be applied to other policy areas displaying similar domestic/international linkages.

Third, this work demonstrates how regulatory systems interact at the international level to determine certain patterns of waste trading. While many works in this field have compared different responses at the domestic level to international environmental issues (e.g. Boehmer-Christiansen and Skea, 1991), few have examined the interplay between these national systems - for example, how Germany and Britain have become waste-trading partners. In turn, these observations intersect with the literature on the links between international trade and the environment, to show how national regulatory differences can, in the case of harmful goods such as hazardous wastes, actually facilitate the movement of such goods across national frontiers.

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Finally, this work overcomes problems inherent in many studies comparing the effectiveness of environmental policy across countries. Effectiveness is a slippery variable to measure and compare, unlike waste importation or exportation, where reliable data is available. In turn this gives an indication of whether a country is risk averse (e.g. Germany and Australia), or risk acceptant (Britain and France) with respect to the waste trade. Some questions remain. For example, are Britain's attitudes towards waste importation mirrored in attitudes towards other issues, or are there in fact significant differences across issue areas? Early analysis would suggest that is the case: Britain and France also host a large part of the world's nuclear reprocessing industry, for example. Also, while Germany, by not importing wastes, demonstrates a high degree of risk aversity in protecting its domestic environment, by exporting wastes abroad, it displays a comparative lack of concern for the environmental health of other countries. Hence, very quickly these questions run into issues of state sovereignty and inter-state interaction, and with the issue of why some countries are more actively engaged in international environmental cooperation than are others.

### **III. Regulatory Change and European Integration**

The theoretical approach of this book and its empirical cases intersect in many ways both with debates over the direction, pace and mode of regulatory change and with debates over European integration. Naturally these two are not separate. The context in which national regulatory policy is made has changed dramatically over the last decade, to the extent that some question the utility of talking about national policy at all. National borders are becoming more porous, transnational communications among individuals and groups are easier, and policies are

being made with a greater understanding of the extent of global ecological interdependence. These days it really is possible to talk of an international community and of transnational networks (Keck and Sikkink, 1998). Domestic contexts are changing too, with private and non-governmental actors taking or being given a more extensive role in governing their own actions with respect to the environment. In three of the cases - Britain, Germany and France - the EU has taken on an increasingly important role in issuing directives and policy guidelines then implemented by member state governments. At the same time, most of the countries examined here are in the process of overhauling their existing environmental regulatory systems, with perhaps the most extensive changes being undertaken in Britain, where administrative structures are being reorganized towards a system of integrated pollution control (IPC).

For scholars of environmental policy, the field is therefore opening up to a variety of factors that enable and impede desired policy outputs and regulatory change. This book has studied key institutional parameters and actors in the context of a nested model of regulation: to understand hazardous waste politics, for example, it is also necessary to understand national politics. It is the interaction of these national systems that create both specific patterns of waste trade, link certain important actors (e.g. firms and NGOs), and help generate the shape of international governance regimes. Getting at this nexus was a complex exercise; therefore pressures for change originating outside the national systems were not brought explicitly into the theoretical analysis. Also, the bounded nature of the cases made a full-scale examination of how national regulatory landscapes have changed as the 20<sup>th</sup> century ends impossible. At the same time, this approach and some of the results found at national and local levels have important implications for the rather tangled set of approaches to both regulatory change in general and environmental regulatory change as a result of European integration in particular.



This debate is indeed a complex knot of theories, approaches and frameworks. Many, although not all, are centered around the evolution of the EU, and most emphasize the importance of international and transnational driving forces of change. The empirical work presented in chapters 4 to 6 strongly supports the continued importance of national differences in environmental policy, supporting "bottom-up" perspectives on EU integration. However, close examination shows that policy makers are coming to share a certain set of ideas, most commonly about the relationship between economic growth and environmental protection. These ideas, transmitted from the international level and from other states and organizations have been (or will be) translated into national practice in ways that are mediated by existing institutional configurations.

This section focuses on some approaches to understanding regulatory change, especially within the context of the European Union, and how well they capture both the dynamics of and differences across countries. It begins with a larger scale, structural approach, regulatory convergence, which is structural in the sense that its driving forces are, if even depicted, considered to be broader economic trends. Actors (nations, industries, and groups) react to these pressures, and rarely do they shape them. It goes on to discuss more actor-based approaches which, specifically, seek to explain the evolution of EU environmental politics in the 1990s. These are "bottom-up" approaches, examining the way member states shape transnational politics in different ways, and conflict/stalemate approaches, which ask why we have seen less progress than expected in this arena. Finally, this analysis goes on to consider ecological modernization theory, a more ideational approach than others. It captures both difference and

dynamism; unfortunately, it lacks causal impetus. This, the analysis suggests, can at least in part be remedied by looking at institutions and the actors associated with them.<sup>6</sup>

#### a. Regulatory Convergence

The notion of "globalization" has taken a strong hold on the political and economic imagination in recent years, in both the media and the academy. Debates over regulatory convergence - what it entails, the extent to which it is occurring and the direction it is taking - have become particularly heated in the twin contexts of European integration and economic globalization, not only over whether or not convergence is possible, but also over its desirability (Vogel, 1995). Harmonization (convergence) theory has its roots in international economic theory. In this form, it argues that an increasingly open global economy - one which allows the free movement of factors of production and of goods - will lead to convergence of national differences in prices, rates of inflation, interest rates and other key economic variables. More "political" approaches examine convergence in governance systems: "the tendency of societies to grow more alike, to develop similarities in structures, processes and performances" (Kerr, 1983:3, cited in Unger and van Waarden, 1995:3). In its strongest form, it implies the convergence of countries' policies and policy practices towards identity (Jacobs, 1994:32, Hollingsworth et al, 1994). In addition to the pressures imposed by the global economy, Weale et

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<sup>6</sup> Some related works study the diffusion of ideas and the notion of social learning, and how governments and organizations themselves learn. Using the categories developed by Jänicke (1982), diffusion may happen "horizontally" (e.g. Sand, 1990), or "vertically", through the network of international environmental regimes and agreements (e.g. Haas, forthcoming). Some of the work on advocacy coalitions and policy learning at the domestic level includes Sabatier and Jenkins-Smith, 1993 and Lee, 1993; thanks to Alastair Iles for conversations here. Lateral links between private actors across national boundaries are an important part of these processes, for example, between firms (as in ISO agreements), between other societal actors (transnational networks) and even between groups of local authorities in different countries.

al (1996:257-258) identify other pressures for convergence. These include issue area characteristics and bureaucratic constraints.

Concerns about convergence on the lowest common denominator are addressed in Vogel (1995). He argues that whether the "California Effect" (convergence towards the highest standards) or the "Delaware Effect" (a "race to the bottom") dominates depends on the "critical role of powerful and wealthy 'green' political jurisdictions in promoting a regulatory 'race to the top' among their trading partners" - a role that has been played by Germany in the EU (Vogel, 1995:6). Also important is the degree of economic integration that exists within the trade area. Hence, "trade liberalization is most likely to *strengthen* consumer and environmental protection when a group of nations has agreed to reduce the role of regulations as trade barriers and the most powerful among them has influential domestic constituencies that support stronger regulation" (ibid.:8).

The EU has, especially since the signing of the Maastricht Treaty on West European Union, sought harmonization of member states' environmental policies, as a way of removing obstacles to free trade, improving transparency and minimizing environmental damage.<sup>7</sup> The scope of supranational involvement in the domestic affairs of its members has broadened considerably. During the early 1990s, the EU actively pursued the formation of a common European environmental policy, advocating convergence well beyond minimalist notions of convergence of goals and indicators. Indeed, the EU vision appears to be one of harmonization of the very procedural aspects of environmental regulation - structures and styles - studied here

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<sup>7</sup>See Vogel, 1995:13-18 for a discussion of non-tariff barriers to trade. The most important case in the EC/EU context is the Cassis de Dijon case (1979), whereby the European Court of Justice ruled that the German minimum alcohol content ruling constituted an unfair barrier to trade. This ruling "made explicit the concept of 'mutual recognition'" of domestic differences (Vogel, 1995:31). However, while this seemed to allow for a less complex solution than harmonizing domestic health and safety standards, Vogel argues that in fact this judgment opened up

(Buller et al, 1993). One of the keystones of policy harmonization is the Integrated Pollution Prevention and Control (IPPC) Directive of 1996.<sup>8</sup> This directive is said by many to draw strongly on Britain's IPC legislation (Skea and Smith, 1998: 265) and is "concerned primarily with environmental procedures (how and under what conditions authorization for industrial sites might be granted) rather than with environmental objectives" (ibid.:278). In its ultimate form it came close to the British model, according to Skea and Smith in part because British legislation was already in operation, and in part because the British model fell close to the median point between the two EU extremes - Germany's strict standards and controls, and Spain's desire only to set environmental standards.

#### b. "Bottom Up" and Conflict Based Approaches

At the same time, several weak points have emerged in the European environmental project. States have made efforts to protect national customs and practices in the face of harmonizing forces, and both the European Environment Agency and DGXI, the environmental directorate, have been relatively marginalized within the EU's governing structures.<sup>9</sup> There are some other strong arguments against the utility of the harmonization debate as a framework for understanding environmental policy change in the EU member states. Among the most cogent is the question of what the EU countries are supposed to be converging to, or, what is the European

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the doors for such processes, leaving both consumers and many producers unwillingly exposed to "products produced according to the standards of the least stringent national authority" (ibid.:33).

<sup>8</sup> Directive 96/61.

<sup>9</sup>The European Environment Agency (established in 1994) spent its first years of existence collecting harmonized environmental data from the member states, a next to impossible task given the huge differences between national monitoring systems ("European Green Police Have Carrot but No Stick", *The New York Times*, September 8, 1996, p. 3). Its function is primarily as a monitoring agency; it has no formal to implement or enforce European environmental legislation.

regulatory style? Also previous chapters have shown that regulatory harmonization - at least in its strong form - is not happening among the EU member states. Some states, such as France, have attempted little programmatic restructuring of their environmental policies per se, while Britain's policy élites have been more concerned with re-structuring environmental regulation, towards a more streamlined, and potentially more easily monitored and managed system. Germany has been more technocratic in its approach, basing its recycling and re-use policies on the ability of its industries to adapt to new policies through technological innovation within the existing regulatory context. Existing differences between styles and practices have also remained remarkably persistent in the face of pressures for change. In turn, this raises issues of agency: if differentiated responses are to be understood, then the actors (not simply the "forces") for change must be specified and their impact laid out. This is where some of the more actor-based theories of EU environmental integration come in.<sup>10</sup>

Several scholars and analysts have taken a "bottom-up", rather than "top-down" perspective on European environmental integration (Lowe and Ward, 1998, Liefferink and Andersen, 1998, Weale, 1995). These works emphasize the interactive nature of domestic-international policy processes, looking, for example, at the way some member states have influenced EU environmental policy directives (Skea and Smith, 1998; Jordan, 1998a) and at the unevenness of policy implementation. With respect to the latter, recent papers discuss the utility of the logic of "appropriateness", examining how and whether member states adopt EU Directives, and if they change or adapt their own systems in accordance with pressure from Brussels (Knill and Lenschow, 1998; Héritier, 1998). This in turn fits with Skea and Smith's interpretation of IPPC.

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<sup>10</sup> Although for a more nuanced account of policy convergence and feedback which leaves room for national differences, see Coleman and Grant, 1998.

Elsewhere, H  ritier (1996) argues - counter to Vogel's contention that states are converging upwards towards the German model of environmental regulation - that approaches at the EU level towards environmental policy have differed according to issue area. While in some areas of European environmental regulation, measures are modeled after the regulatory style of one member state, others follow the style of another. Thus, "in the field of clean air policy, some Directives are shaped according to the German tradition gear towards technology-based emissions control while others are patterned after the British model of regulating ambient air quality" (H  ritier, 1996:293). Which approach dominates depends first, on which state makes the "first move", and subsequently on patterns of problem-solving, "negative coordination, bargaining and compensation" (which determine whether the "first mover" advantage will be translated into policy outcomes). Therefore, there is no dominant national tradition in European environmental regulation. Instead, what has emerged is a complex and fairly haphazard "colorful patchwork" of different methods of regulation, reflecting distinctive national regulatory styles.

Perhaps another set of approaches falls under a "conflict/stalemate" rubric. Certainly, while institutional changes introduced under the 1990 Treaty on European Union (the Maastricht Treaty) severely restricted the individual veto power of member states, conflict remained a hallmark of member state interactions in this broad sphere, and has at times threatened the process of European integration itself. For example, in 1995 Shell Oil attempted, with British government approval, to dispose of one of its smaller, redundant oil rigs at sea, the Brent Spar (Weale, 1995). The subsequent vocal opposition from other European countries (including the bombing of a gas station in Germany) and their governments eventually forced the British government and Shell to back down, and the wastes were towed to shore. Bad feelings lingered

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on to re-erupt some six months later with the BSE (Mad Cow Disease) scandal. Following the announcement that links had been established between the bovine and human forms of the disease, British beef exports were banned in Europe, to great outcry from the British beef industry. The British government to the ban then announced its intention to block every piece of European legislation until the ban was lifted: this threat eventually led the Council to reconsider this ban.

Environmental issues have proven not to be the technocratic problems that some perhaps hoped. Instead they are highly politicized in the European context, and attempts at further policy harmonization are under threat. The "tension between the international dimension of pollution control and the national basis of environmental regulation" has not yet been resolved (Weale, 1995:20). Governments still have both ability and desire to resist these changes, albeit sometimes by unorthodox means, and the failure on the part of the EU to resolve conflicts before they erupt into public confrontation underscores weaknesses in the European integration process itself.

In the late 1990s, Brussels took a more cautious approach in handling the more powerful and contentious member states (Haigh and Lanigan, 1995:34), as other concerns began to dominate EU politics. Information made available on the implementation of EC environmental laws show that "suspected infringements of EC rules were higher in the environmental field than in any other area of law except the internal market", and that there is evidence that the Commission "may be slackening the pressure on the member states" to conform with its directives (ENDS Report 261, October 1996, p. 39).<sup>11</sup> Environmental policy was pushed lower in

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<sup>11</sup>Interestingly, although Britain ranks high on the list of states which infringe or fail to implement environmental directives, its record is by no means the worst overall, and in many cases, Germany out-ranks it in this area. For example, one study which compares Germany's and Britain's record on environmental directive implementation shows a 20% deficit on the part of the Germans, compared to a 15.38% deficit on the part of the British (Peattie and Ringler, 1994:218).

the agenda in the mid to late 1990s, as the EU began concerning itself more with lateral expansion, to include East-Central Europe, and the broader economic integration process. As Andrew Jordan argues, "environmental policy in the EU suffers from two significant 'gaps': an implementation gap - the failure of member states to put its mandates into action - and an integration gap - the failure to incorporate environmental decisions into 'decision-making at all levels" (Jordan, 1998b:39). Neither has been addressed in an institutionalized context.

The theoretical framework developed in this book has much in common with both the "bottom-up" and indeed the resistance scenarios. Quite clearly, while not static, Britain and France, certainly, cannot be described as rapid innovators. Even in more statist Germany, reforms have been slow. National actors, policies and practices, not supranational ones, have tended to dominate in every case. However, the story is not so simple. Policy innovations have been introduced, and they are quite sweeping. There are also striking similarities between the reforms underway in Britain, Germany, and other EU members.<sup>12</sup> Not only are these reforms roughly coincident in timing, they reflect a more programmatic, plan-based approach on the part of national government, and demonstrate a shift in policy makers' perceptions about environmental issues: an ideational convergence of sorts.

### **c. The Ecological Modernization Framework**

Knill and Lenschow (1998) introduce the distinction between different modes of impact of EU integration, contrasting command-based impacts - e.g. EU Directives - with diffusion-based impacts, such as the transmission of policy ideas among members via the common forums

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<sup>12</sup>For example, The Netherlands in 1991 introduced a National Environmental Policy Plan - the most ambitious attempt yet by any country to introduce concepts of sustainability throughout the public policy sphere. See Wintle and Reeve, 1994.



provided by the organization. Following the latter path, another framework captures both the differences and the dynamics of policy change among similar, tightly integrated states, and has been applied across many OECD countries, not just EU member states.

"Ecological modernization" (EM) is a theoretical paradigm that has in recent years become known in the fields of policy analysis and environmental sociology, albeit more in Europe than in the United States. Interpretations of the concept differ vastly, but Weale (1992a) takes a policy-oriented interpretation.<sup>13</sup> He argues that the first wave of environmental protection - the "old" politics of pollution - shows distinct characteristics across countries. First, most policies separated and addressed pollution control problems by medium: air, water and land. Second, policy measures tended to be aimed at the point of their greatest effect - in many cases (solid and hazardous waste generation being a case in point) at the local level - rather than at the point of generation: a reactive, rather than anticipatory approach. Third, policy instruments were based on traditional command and control techniques - for example, setting and enforcing uniform standards across industries.

The start of the second wave of environmental protection - the "new" politics of pollution - coincided with the release of the Brundtland Commission Report on Sustainable Development (1987). The most evident changes in regulatory philosophy make up a new series of linkages that together are usually considered to comprise ecological modernization. Its central claim, as

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<sup>13</sup>For overviews and critiques of ecological modernization theory, see Blowers, 1997, Mol, 1996 and Christoff, 1996. The relationship between environment and modernity in the broadest senses arose from the work of Giddens (e.g. 1990) and Beck (1992, 1996). Christoff (1996) distinguishes between three uses of the term - as environmentally sensitive technological change, as a style of policy discourse, and as a belief system possible connoting systemic change - in order to draw up a typology of weak versus strong ecological modernization. Work by Weale and Hajer (e.g. 1996) fits best into the policy discourse and belief system categories. Christoff's major critique of the concept, which is echoed by Blowers, is that "[it] may serve to legitimize the continuing instrumental domination and destruction of the environment, and the promotion of less democratic forms of government.... Consequently there is a need to identify the normative dimensions of these uses as either weak or strong, depending on whether or not such ecological modernization is part of the problem or part of the solution for the ecological crisis" (Christoff, 1996:497).

developed in policy programs, is "that environmental protection should not be regarded as a burden on the economy but as a precondition for future sustainable growth" (Weale, 1993:207). Thus, it views recent changes in national regulatory styles and structures as, at least in part, a shift in perceptions of both environmental problems and the means which are most effective in achieving environmental protection. However, as Weale and Christoff point out, this basic premise has generated a range of corollaries.<sup>14</sup> These can be summarized as follows:

- economic growth/development and environmental protection are seen no longer as competing, but rather as compatible goals.
- the environment is more than the sum of its parts (reduction of emissions into one medium can result merely in a shift of the pollution burden to another): hence, an integrated rather than medium based approach to pollution control
- effective approaches to pollution control take into account effects beyond the local and even the national levels - thus including degradation of the global commons. Most countries have joined international environmental treaty arrangements, and compensate for transboundary pollution in their policy measures
- anticipation is better than cure: "end of pipe" technologies should be replaced by an emphasis on resource efficiency and recycling, and waste control/minimization further upstream in production processes; hence an emphasis on "green technology".
- Finally (and this so far is an issue of lip service rather than direct action) this view espouses the superiority of market or incentive based regulatory mechanisms (green taxes, tradable permits and so on) over traditional command and control based regulatory mechanisms.

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<sup>14</sup>See Weale, 1992a:75-79, Christoff, 1996:477.

The main advantage of the ecological modernization thesis over regulatory convergence arguments is that it captures more accurately both on-going dynamics in the sphere of national environmental policy in recent years and the diversity of national practices and styles. While the ideas driving these changes are often transmitted from the international level, for example through EU policy forums and consultative processes, the eventual form they have taken on in each country has depended on configurations of domestic level factors.<sup>15</sup> Therefore an approach which has identified relevant actors and institutions is well placed to apply this framework, and indeed to remedy its major weakness as a theory: its under-specification of the modes and mechanisms whereby certain ideas are transmitted and/or selected by relevant actors.

There are many different groups of stakeholders in environmental policy reform, some of whose interests are more clearly defined or affected than the interests of others. Alignments between these groups, as well as existing consultative and administrative structures have played an important part in mediating the transmission of new ideas about environmental policy. For example, the British waste disposal industry has, down the line, supported a more centralized system of environmental management. Institutional factors - which determine, for instance, who has access to the policy process - helped determine the outcome in each case. The more closed British system (hardly surprisingly) remained unresponsive to demands for more open processes of consultation. On the other hand, the Green Movement in Germany, both through die Grünen and through the more established parties and other environmental NGOs were able to push through a more extensive series of environmental measures which many producers regard as overly onerous. Domestic institutional factors have also played a key role in slowing down the

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<sup>15</sup>Thus, the ecological modernization framework shares much in common with other ideational approaches in vogue in the New Institutional field at the moment (e.g. Goldstein and Keohane, 1993; Sikkink, 1991, and Hall, 1992), as well as some of the same problems (Blyth, 1997).

pace of change. In most of these cases, in Britain in particular, the process of ecological modernization is proving a slow road indeed (Jordan, 1993). Years can elapse between the announcement of policy plans and their implementation, and ambitious policies are more often than not severely diluted en route. In other words, the gap between rhetoric and reality remains (Aarhus, 1995; Wintle and Reeve, 1994).

Despite its breadth, the ecological modernization framework is a more powerful account of changes currently underway at the level of the EU member states than are theories based on regulatory convergence. Viewed through the lens of European environmental policy as a separate issue area, it can be argued that EM provides a more productive guiding strategy for EU policy makers to adopt. Not least, it eschews the discourse of harmonization, which many states still find threatening to their national sovereignty, yet still promises a high degree of environmental protection, and it commands much support from industry and other societal groups. Admittedly, this is reasonably unlikely to happen, as long as policy makers are still caught up in the broader rhetoric of European integration and world trade liberalization, which continue to view regulatory differences as a barrier to the free movement of goods and factors of production. However, it is quite clear that the complex dynamics and interaction between "domestic" and "international" political change will remain an object of study for years to come.

#### **IV. The Future of the Waste Trade: Observations and Prescriptions**

The international trade in hazardous wastes is a problem that has received much attention in the last ten years: from international organizations, such as the UNEP, the OECD and the EU, the international media, NGOs such as Greenpeace, national governments, and scholars. As

argued in Chapter 1, much of this attention has focused on the North-South aspects of the trade, and on the trade as a transboundary environmental issue. The international regime governing the waste trade is now moving towards a ban on the transfrontier movements of all wastes from North to South, even those destined for recycling, and the EU is attempting to implement the principle of self-sufficiency in hazardous waste management on the part of its member states. The following sections examine the challenges facing the international waste trade regime, and the emerging changes, challenges and opportunities in the field of waste management. Final sections identify some of the main flaws in this regime, and to make some policy recommendations at the international and domestic levels for managing this dynamic issue area.

#### **1. Re-Framing the Issue: The Current State of the Waste Trade**

The underlying view of the waste trade presented here is that it is best seen as the most visible symptom of the crisis facing most developed countries in terms of adequately disposing of the increasing quantities of hazardous wastes they generate on an annual basis. The trade itself emerged as a result of a combination of factors: the expansion of international trade following the lowering of barriers to trade among nations; the vast expansion in the generation of waste products, and the increasingly stringent, and costly regulations placed on waste disposal in many countries. However, the distinctive patterns the trade took on, in terms of disposal routes, depend in turn on national regulatory practices. The heart of the problem lies not in the actual transfrontier movement of wastes, but in the need to ensure adequate disposal and regulatory infrastructures not only in developed countries, but also in countries with emerging or transitional economies.

The movement of wastes among OECD countries cannot be explained by recourse to the pollution haven hypothesis. The strong version of the hypothesis states that firms are likely to relocate in order to take advantage of less strict environmental regulations than those prevailing in their home country. Weaker versions of the hypothesis make the claim that goods rating low on the environmental scale - such as wastes and pesticides - are more likely to be exported to such countries.<sup>16</sup> One of the problems with this hypothesis is that it assumes that a fairly simple dividing line can be drawn between "weak" and "strong" systems of environmental regulation. While this is probably the case when comparing industrialized countries with those of the so-called Third World, it is less useful as a benchmark for comparing the industrialized countries with each other. As the above analysis shows, it is not differences in regulatory *effectiveness* which matter here, but rather the *procedural* differences, in terms of regulatory styles and structures, differences which are much harder to quantify on a simplistic basis. The waste trade makes an interesting object of study as it first emerged in the absence of any recognition of it being a problem, and continued that way for many years - until the late 1980s and early 1990s - by which time patterns of trade were well in place. Hence, it can be viewed as an "unintended spin-off" of regulatory practices, which reveals much about the existing regulatory climates of importing and exporting countries. More to the point, the international regime governing the trade, not only the Basel Convention, but also EU and OECD rules and directives, is itself based on the pollution haven hypothesis: that wastes will move from countries with strong regulatory systems to those with weaker systems. While this is certainly the case with respect to illegal waste dumping, it does not apply to the bulk of the waste trade: hence, basing a regime on these principles alone may ultimately prove extremely counterproductive.

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<sup>16</sup>See Strohm (1993) and Copeland (1991)

## **2. Waste Management on a Global Scale: Changes, Challenges and Opportunities**

### **a. Trends in Hazardous Waste Generation and Disposal Techniques**

As Table 2.2 (at end) shows, the total amount of hazardous wastes generated among OECD countries has increased quite substantially in the years since 1989, despite verbal commitments made by most states to implement waste minimization policies. At the same time, new types of wastes, often posing higher degrees of hazard and/or special handling requirements are being produced (Wynne, 1987). Recent reports show, too that hazardous waste generation and disposal in newly industrializing, emerging and transitional economies is increasing, to the point where it is becoming a problem due to the lack of adequate facilities and management practices. In 1998, barrels of wastes containing highly toxic substances were found in Cambodia. They were found to have originated in Taiwan, who was forced to repatriate the waste after the US refused to accept it.<sup>17</sup>

Actual trends vary internationally: the Russian Federation, for example, has witnessed a decrease in amounts of hazardous wastes reported, but is facing a disposal crisis, especially in dealing with the billions of tonnes of wastes still stockpiled. Middle Eastern countries together produce roughly over 1 million tonnes of hazardous wastes per year; outside of Saudi Arabia, facilities are minimal if they exist at all. In South East Asia too, the picture is similar: Malaysia, for example, has doubled hazardous waste volumes between 1984 and 1994. The situation in English-speaking Africa is possibly worse. The International Maritime Organization estimates that about 2.23 million tonnes of hazardous wastes are generated in these countries, over half of

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<sup>17</sup> "Cambodia Town's Luck Leaves Illness in its Wake", *The New York Times*, January 4, 1999.

which is produced by South Africa. The report continues: "the wastes are mainly (with the partial exception of South Africa) discharged to sewers, sent to municipal landfill or dumped on open land. Of the countries surveyed, South Africa, Namibia and Mauritius appear to be the only countries with commercial hazardous waste disposal facilities"; yet in the figures quoted, Nigeria, Ethiopia, Kenya and Zimbabwe directly behind South Africa in terms of waste generation.<sup>18</sup> In many countries, waste disposal issues are a far higher priority than the much more abstract issues of global warming or ozone depletion: "[m]ost of Africa, the Indian subcontinent and Latin America have no waste-water treatment facilities; raw human and industrial sewage is discharged directly into the same bodies of water used for drinking...In China, an estimated 25 billion tons of unfiltered industrial pollutants went directly into the waterways in 1991, which means there was more toxic pollution in that one country than in the whole of the Western world" (Easterbrook, 1994).

Second, the problem of developing, siting and operating new disposal facilities continues. There is little sign that the NIMBY phenomenon in developed countries is diminishing, and the EU is becoming increasingly strict on landfill requirements. An EU Directive requires operators of existing landfills to report on bringing facilities up to standards by 2002 and by 2004, co-disposal will be banned (ENDS Report 280, May 1998, p. 21). Ultimately, landfill will be phased out all altogether.<sup>19</sup> More optimistically, there are signs of technological innovation on the part of the waste disposal industry in developing new and safer techniques for disposing of hazardous wastes. Several of these were outlined in the context of the Australian case. They include techniques that employ natural substances to break down toxic elements within a controlled

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<sup>18</sup> From "Africa study reveals state of hazwaste management", *Haznews* 109, April 1997, p. 17; other reports from "Chemcontrol Symposium II: Developing Markets", *Haznews* 104, November 1996, pp. 22-4.

<sup>19</sup>"Proposed Landfill Directive issued", *Haznews* 109, April 1997, p. 1



environment, and the development of portable disposal facilities - thus reducing risks imposed by transporting wastes. Others of the large multinationals in the industry are developing highly sophisticated waste-to-energy recovery facilities. These new techniques are still subject to some problems: they are costly, especially in terms of start-up capital requirements, and are in many cases still in testing stages.

#### **b. Trends in the Waste Disposal Industry**

The waste disposal industry continues to change in scope and structure. In fact, the recent evolution of the industry in response to changing national and international regulations generates some observations pertinent in this context concerning the interactive effect between industry structure, activities and goals and changing national and international regulatory requirements and policies. The industry has transformed from a conglomeration of many small firms, operating primarily within national borders and often at an extremely local level, to one that is dominated by five or six large and highly diversified multinational corporations. These firms and their representative trade associations are trying hard, with a moderate degree of success, to re-define themselves: away from the "environmental villain" image which still dominates the public imagination, towards being considered an important, and socially responsible part of the environmental services industry.<sup>20</sup> To that end (and admittedly with a high degree of private self-interest), they are actively lobbying at a variety of governmental levels against the activities of

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<sup>20</sup>For example, the British National Association of Waste Disposal Contractors (NAWDC) is now renamed the Environmental Services Association. The environmental services industry is currently one of the biggest growth sectors in the world. In 1996, the OECD estimated the value of the global market at \$250bn (OECD, 1996), predicting "that for waste management products, demand will grow by over 50 percent between 1990 and 2000, with the value of the world solid waste handling market estimated at \$213bn by the year 2000" (Cooke and Chapple, 1996:15). There is as yet no universally accepted definition of this industry. However, it is usually considered to include any goods or services, employed at all stages of the production process, considered better for the environment than their alternatives (OECD, 1996:213-214).

smaller firms, and are engaged in extensive public relations exercises to demonstrate their awareness of their environmental responsibilities. These changes coincide with new assertiveness in business regulation. Cross-sectoral and multinational, voluntary codes, including EMAS and ISO 14001, internationally recognized agreements, have flourished in recent years, especially in Europe and in firms dealing with European counterparts.<sup>21</sup>

The industry evolved at first in response to changing national regulations, which imposed stricter requirements on waste disposal contractors. In some countries, such as Britain and the US, the era of privatization and industry deregulation of the 1980s enabled and encouraged increased private sector activity in this field. These trends in part explain the emergence of the international hazardous waste trade. Concern over the expanding waste trade in turn prompted international regulatory authorities to take action, leading to the negotiation and implementation of the Basel Convention and the set of EU Directives and policy programmes aimed at halting the waste trade. At the same time, most industrialized country governments pledged to halt exports of wastes to countries not equipped to handle them appropriately, and in a few cases, to ban waste imports. These developments mark the regulatory baseline set in the early 1990s: increasingly stringent disposal requirements at the national level, the emergence of international regulatory authorities onto the scene, and policies in place to ban the waste trade.

The waste industry was not slow in responding to these changes, leaving the regulators to catch up. The industry has attempted, and at first failed to influence the course of the negotiations over closing the "recycling loophole" which took place at subsequent meetings of the parties to the Basel Convention. Their influence is on the rise, however, in more recent Technical Working Group Meetings to sort out the details of these requirements (Clapp, 1999).

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<sup>21</sup> See Delmas, 1999 and Clapp, 1997.

Many of the big firms, such as Waste Management International and the Danish firm Kommunekemi are now following relocation strategies in part to overcome bans on wastes crossing national frontiers, and in part in response to demands by many countries for better waste disposal infrastructures (Puckett, 1994; Clapp, 1997). This is a development to which international bodies have yet to respond.

The waste disposal industry has been more successful in having its demands met by the EU and there has been a definite change in firms' target level for lobbying activities. It could be argued that they are now setting the pace that government and official actors have yet to reach. The big firms, such as Générale des Eaux and WMI, have been able to take advantage of an expanded opportunity structure for companies offering the sorts of services they do. These include high-level recycling, incineration and the capacity to collect wastes over a large territorial area arising from the increased stringency of EU and national regulations. However, as Brusco et al (1996) argue, the EU imposed these regulations only in light of the fact that firms existed who were able to meet the new requirements.

### **3. The Future of the Waste Trade: Responding to Regulatory Challenges.**

The two main bodies engaged specifically in regulating the waste trade from the international level are the UNEP, which administers the Basel Convention and subsequent amendments, and the EU. The EU, after a long debate over whether or not wastes should be classified as a normal good, is increasingly trying to restrict their movement not only out of the Union, but also among the member states. Its support alternates between the proximity principle and the self-sufficiency principle. Individual governments are also taking unilateral steps to

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address these issues, formulating policies specifically to address the waste trade, and problems relating to waste management and administrative structures. These vary extensively from country to country, and are, in many cases, contingent upon pre-existing national problems and circumstances. While there is no blueprint for effective waste management, there is much that individual countries can learn from each other, through adapting new technologies and regulatory approaches to fit different circumstances. Coordination and facilitation of such activity from the international level is needed not only for less developed and emerging economies, but for the most advanced economies as well.

The UNEP and the EU differ significantly in their powers to enforce compliance with their rules and recommendations. The EU oversees a small group of highly industrialized nations who share a high level of common interest and has considerable authority to intervene in the affairs of its member states. The UNEP, on the other hand, has the unenviable task of coordinating the interests and demands of all UN member states. Hence, the waste trade regimes differ significantly in scope and means, while sharing the same ultimate goal: to stop waste trading, especially the export of wastes to countries ill-equipped to handle them. Hazardous waste policy in the EU is integrated much more with the overall package of policies which cover environmental policy and the movement of goods around the Community, while the UNEP engages in much less issue linkage across international environmental agreements.<sup>22</sup>

In both cases there is an overriding need for a commonly accepted definition and classification of what exactly constitutes a hazardous waste, and there needs to be an

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<sup>22</sup>Agenda 21, on sustainable development, introduced at the 1992 UNCED meeting in Rio represents the main attempt by the UNEP, the UNDP and other international environmental NGOs and some governments to bring environment and economic concerns under one common framework. While it has received a high level of rhetorical support, it has yet to acquire this level of support and even a shared understanding of its aims, in practice.

international clearinghouse for data on all aspects of hazardous waste management.<sup>23</sup> Recent negotiations towards waste lists, under the auspices of both Basel and the EU are moving slowly, as recent reports of the Technical Working Group of the Basel Convention suggest, although the OECD's "red, amber and green" lists of wastes have provided a model (OECD 1993b). Without reaching agreement on these factors, these regimes will not even achieve the minimal goal of improving issue transparency.

The Basel Convention does not directly apply to the legal waste trade among OECD countries. Nonetheless, these findings have important implications for the ultimate effectiveness of this regime. First, it fails adequately to address the underlying causes of the waste trade, in particular, the crisis facing waste management in developed countries. For example, it is one of the few international agreements aiming to regulate polluting substances not establishing targets for reducing the production of the pollutant in question, even though waste volumes are increasing across countries and continue to outstrip available disposal capacity. Ultimately, and especially given the relative lack of monitoring and enforcement capabilities, failing to address these issues could lead to one or more of several possible outcomes:

- A continuance, and escalation of illegal waste dumping on less developed countries: there have been many recent reports of US wastes being dumped in China and Hong Kong, and Germany recently had to take back a shipment of wastes illegally sent to Lebanon.
- Defection from the Basel Convention by leading players: countries that have already expressed an unwillingness to comply with the ban on global movements of scrap metals include India, Australia and the United States

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<sup>23</sup> See Krueger, 1998 for the argument that definitions under Basel should focus on "hazard" rather than "waste" to develop a coherent regulatory scheme.

- Diversion of trade to more developed countries willing to receive these wastes. These could include "second-tier" emerging economies, such as in east central Europe, southern Europe - figures show a vast increase in waste importation by Spain in recent years - and East and Southeast Asia. As analysis of Britain and France showed, just because a country is highly developed, this does not mean it has disposal facilities capable of destroying toxic wastes in the safest manner.
- Relocation or expansion of waste disposal firms abroad
- Costly and potentially highly dangerous storage of wastes in countries unable to dispose of them in a timely fashion; this has already been seen to be the case in Britain and Australia.

A similar set of results could emerge should the EU adopt and enforce the principle of self-sufficiency in waste disposal among its member states. France appears to have opted out of this process. Other states, such as Germany, are objecting to the inclusion of a ban on the transfrontier movement of wastes destined for recycling or recovery, and yet others, such as Britain, are finding it hard to translate this principle into practice.

These are not easy issues to address. However, some basic recommendations can be made. First, the international community has to seriously address questions of waste generation by both advanced industrialized and less developed and emerging economies and to begin to set targets for reducing the volumes of hazardous wastes generated for final disposal. Some countries, such as Germany, are beginning to implement effective waste minimization policies. These appear to work best when attention is focused on production processes themselves, and efforts are made to re-use and recycle materials within the manufacturing process and when new, and more efficient technologies are employed. Again, the private sector appears to be ahead here,

as data on the growth of the environmental services sector shows. Such measures also appear to command a high degree of support from broader societal interests.

Second, effective and lasting waste minimization practices are a very long-term goal, and involve a high degree of reorganization and restructuring of existing industrial practices and attitudes. There are, however, some interim solutions emerging. As outlined already, large strides have been made in recent years towards the development of new waste treatment technologies, including more environmentally sound techniques, the development of portable treatment plants and the development of technologically advanced waste-to-energy recycling and recovery plants. However, the political will is lacking to put many of these innovations into practice, and to provide the sorts of subsidization needed, especially at first, to enable them to cover start-up costs. This is the sort of research and development activity which could be taken by bodies such as the EU or the UNEP, who are able to draw on a wide range of expertise from their member states.

Third, as this work demonstrates, broader regulatory and institutional structures matter just as much as specific rules and regulations regarding hazardous wastes in seeking to control the trade. Several countries are beginning to take steps to address existing flaws - administrative reorganization in Britain, for example. This observation applies equally well to the development of waste management infrastructures in developing, transitional and emerging economies as it does to the industrialized democracies of the world. This is becoming a high priority for many international organizations and funding institutions such as the World Bank, the World Health Organization and USAID.<sup>24</sup> Existing studies highlight many of the obvious problems, such as lack of reliable information on the problem, financial resources, technical know-how, adequate

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<sup>24</sup>The UNEP also sponsors the development of regional or sub-regional centers for training and technological transfers of practices regarding hazardous waste management and minimization.

transportation and differing industrial structures.<sup>25</sup> A common conclusion reached is that "there is no single control system for hazardous waste that will work perfectly in all countries. The legal, political and cultural system in each country demands a unique national solution" (Forester and Skinner, 1987:16), as indeed is the case in the OECD.

Some specific recommendations for the development of regulatory infrastructures in these countries emerge from this work nonetheless. First, administrative structure matters a lot: in order to control issues such as hazardous waste management which have complex local, national and international ramifications, clear chains of communication between government agencies and administrative units are necessary. Second, it is vital to include as wide a range of interests as possible in the environmental policy process, especially in the immediate policy community. Finally, an implementation process that covers, or at least monitors the "cradle-to-grave" life cycle of wastes is very important. Perhaps then at the very least, these countries could learn from some of the mistakes made by their more industrialized counterparts.

#### IV. Conclusion

Overall, this work predicts that the waste trade, in particular that between the OECD countries will not vanish in the near future, despite the best efforts of international regulatory authorities, and that a blanket ban on waste trading would be highly unlikely to be effective. There are several reasons why this is likely to be the case. International relations theory predicts that cooperation is unlikely to work when states disagree over the basic principles of environmental agreements, and international authorities lack effective enforcement capabilities.

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<sup>25</sup>See Forester and Skinner, 1987, Batstone et al, 1989, and Bromm, 1990.



Most basically, the national regulatory differences driving specific patterns of waste trading remain, and are being eroded slowly, if at all. Furthermore, little concerted and conscientious effort is being made to address the waste trade in the context of the crisis facing hazardous waste management in most, if not all industrialized countries. Paradoxically, in fact, it would seem that the only actors taking on board notions of environmental responsibility here are the large waste disposal firms themselves, who favor, with, of course, an eye on potential profits, the establishment of an international network of high-tech treatment plants and transportation routes.

A theme that has come up time and again in the empirical analysis is that of the NIMBY phenomenon: communities generally oppose the imposition of waste disposal facilities in their immediate localities, and historical experience with practices of uncontrolled landfilling has shown these fears to be justified. Many argue that the bonds of trust between local communities and regulatory agencies have been broken (Wynne, 1987; McDonell, 1991; Munton 1996). The literature on waste exportation shows that the NIMBY phenomenon has been globalized, and indeed has come to be practically an official policy position for several governments. There is, therefore, a distinct need for most societies - both at individual and local levels, and at government levels, to accept responsibility for waste generation practices and for the adequate disposal of these wastes. This implies much better communication of potential risks to achieve a shared understanding. These means there should be high levels of government transparency, greater involvement of community groups in decision-making processes, public education programs, and official commitment towards searching out and employing the best available

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disposal technologies and regulatory practices. New and creative work on these subjects bridging the policy-academe gap, following on, for example, from Munton (1996) needs to be built upon.

Finally, the effect of different national responses to environmental degradation and to international commitments to change behavior is a subject that is understudied in the field of environmental politics, both comparative and international. This book has, at least as a first step, established the importance of institutional constraints and opportunities for actors and stakeholder groups, in affecting their interests, behavior and political outcomes. Further research is required to apply this model of comparative regulation to other countries and issue areas to capture the full range of dynamism and difference encapsulated in these systems.

**Figure 7.1: Contending Explanations***The "Economic Nationalist" Explanation:*

- The legal transfrontier movement of wastes (in either direction) depends on how government actors calculate the costs (or risks) and benefits associated with the outcome of this decision.

*The Comparative Advantage Explanation:*

- Countries with a higher spare disposal capacity are more likely to import hazardous wastes
- Countries with more advanced disposal facilities are more likely to be involved in the legal importation of hazardous wastes

*The Regulatory Explanation:*

- The more decentralized a country's structure of hazardous waste management and regulation, the more likely it is to import hazardous wastes.
- The more closed a country's system of environmental regulation, in terms of allowing access to the policy process to a wide range of groups and interests, the more likely it is to import hazardous wastes.
- The more flexible a country's mode of policy implementation, the more likely it is to import hazardous wastes

Figure 7.2: Main Variables and Findings\*

	Great Britain	Germany	France	Australia	Japan
<b>Structure of Waste Management and Regulation</b>	Diffuse	Intermediate centralized (Federal)	Diffuse	Centralized	Decentralized
<b>Access to Policy Process</b>	Closed	Open	Closed	Open	Closed
<b>Mode of Policy Application</b>	Flexible	Rigid	Rigid	Rigid	Flexible
<b>Waste Importation Propensity</b>	HIGH	LOW	HIGH	LOW	LOW

## \* Notes:

Structure of Waste Management and Regulation = allocation of regulatory authority between national and sub-national authorities, number of regulatory authorities, structure of waste disposal industry (public or private; degree of competition)

Access to Policy Process = composition of environmental policy community plus a country's political opportunity structure (e.g. electoral system, judicial review)

Mode of Policy Application = use of standards; monitoring and enforcement mechanisms and principles

Waste Importation Propensity = a country's status as net importer of wastes, measured over time

**Table 2.2: Generation of Hazardous Waste by Country, OECD Members (1994 and 1997)**

	Year Reported (Published 1994)	Hazardous Waste Generation (1,000 t.)	Year Reported (Published 1997)	Hazardous Waste Generation (1,000 t.)
Australia	n.d.	300	1992	426
Austria	1991	620	1995	915
Belgium	n.d.	27 000	1994	27 530
Canada	1990	6 080	1991	5 896
Denmark	n.d.	112	1993	91
Finland	1987	250	1992	367
France	1992	7 000	1992	7 000
Germany	1990	6 000	1993	9 020
Greece	1990	423	1992	450
Ireland	n.d.	66	n.d.	66
Italy	1991	3 246	1991	3 387
Japan	n.d.	666	n.d.	666
Netherlands	n.d.	1 500	1993	2 600
New Zealand	1982	60	199-	110
Norway	1990	200	1991	220
Portugal	1987	1 043	1994	1 365
Spain	1987	1 708	1987	1 708
Sweden	1985	500	1985	500
Switzerland	1991	736	1993	837
Turkey	n.d.	300	1989	300
United Kingdom	1991	2 956	1993	1 957
United States	1989	197 500	1993	258 000
<b>Total</b>		<b>258 266</b>		<b>323 411</b>

Source: OECD, 1994a, Table 2, OECD 1997a, Table 2. Figure for Belgium counts all industrial wastes produced in Wallonia only. Only wastes destined for final disposal need to be notified in Britain and Germany. Netherlands hazardous waste generation includes 845 000 tonnes of contaminated soil. n.d.: no data provided. The difference between the waste generation figures for US and Europe arises largely because the US defines large quantities of dilute wastewaters as hazardous wastes, while in Europe, these materials are managed under water protection regulation.

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