
Global Governance of Hazardous Chemicals

Challenges of Multilevel Management

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Global Governance and the Chemicals Regime

Hazardous chemicals pose significant environmental and human health risks. A few examples demonstrate the seriousness of the situation. The average nine-year-old male beluga whale in the St. Lawrence estuary has high enough concentrations of polychlorinated biphenyls (PCBs) to be treated as a hazardous waste under Canadian legislation (Béland et al. 1993). Since a chemical park with twenty-five companies opened in Wuli Village in eastern China in 1992, it has become one of possibly several hundred Chinese “cancer villages,” with a rapid surge in cancer-related illnesses and deaths (Tremblay 2007).¹ One study found that approximately 8,000 patients were admitted to a single hospital in the Indian state of Andhra Pradesh with severe pesticide poisoning between 1997 and 2002. More than 20 percent (over 1,800 people) of these patients died as a result of this exposure. Recent estimates of global pesticide poisoning put annual fatality figures close to 300,000, with 99 percent of deaths occurring in developing countries (Srinivas Rao et al. 2005).

These cases from different geographical regions, confirmed by numerous scientific and policy studies, illustrate that countries around the world face considerable difficulties establishing effective policies and administrative structures for managing hazardous chemicals. National policy makers and regulators are tasked with developing and implementing chemicals policy in the face of a host of scientific uncertainties. Many important decisions must be made based on limited scientific assessment information in situations of competing political and economic interests. Recognizing the importance of improved management of hazardous chemicals, governments at the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, adopted the goal that chemicals should be “used and produced in ways that lead to the mini-

mization of significant adverse effects on human health and the environment” by 2020 (WSSD 2002, para. 23). Achieving this goal is a critical but difficult governance challenge.

Global cooperation is necessary to address the full range of environmental and human health risks stemming from hazardous chemicals, as many important issues fall within the realm of international law. For example, the transboundary transport of persistent organic pollutants (POPs), a specific category of particularly harmful chemicals, results in widespread environmental dispersal far from original emission sources. Reports by the Arctic Monitoring and Assessment Programme (AMAP) (2002, 2004, 2009) state that many Arctic species, particularly those at the upper end of long marine food webs, carry high levels of POPs and that most of the POPs found in the Arctic environment come from distant sources as emissions travel long distances. Furthermore, AMAP assessments have concluded that subtle health effects are occurring in Arctic human populations as a result of chemical contamination of food sources. Reports express the greatest concern for fetal and neonatal development risks (AMAP 2003, 2009).

Many people exposed to chemical risks work in agriculture, manufacturing, or waste recovery, including the rapidly growing business in handling electronics wastes (e-wastes). All of these sectors have a strong connection between environmental and human health risks and the international trade in chemicals, goods, and wastes. As a result, environment- and trade-related measures on hazardous chemicals—sometimes falling under the legal jurisdiction of separate agreements and organizations—need to be considered in tandem to design appropriate policy and management measures. Multilateral cooperation may also generate increased awareness and diffuse knowledge about the severity and scope of the chemicals problem. Many people who are exposed to hazardous chemicals are unaware of the risks and not trained to take even the most basic risk-reduction measures. International collaboration can be important for promoting education and supporting capacity building.

Countries that recognize domestic problems with hazardous chemicals and want to take action often have difficulties mustering the technical, financial, and human resources needed to initiate more effective risk-reduction measures. This is particularly true for many developing countries. For example, the government of Tanzania reported in a 2005 national

assessment that POP waste management facilities, including those for storage, transportation, and disposal, were basically nonexistent. Staff working with equipment possibly containing PCBs did not use any kind of protective gear. Tanzanian government officials also noted that spillage of transformer oil likely to contain PCBs was frequent and that waste transformer oil was habitually kept in open areas, or was burned or discharged “haphazardly into the environment” (Tanzania 2005, 92). This situation, not unique to Tanzania, reflects the types of problems handling hazardous chemicals that many developing countries face.

Given the management difficulties plaguing many countries, international legal, political, scientific, and technical activities to mitigate environmental and human health problems of hazardous chemicals can ideally function as catalysts for the diffusion of knowledge and resources for more effective regional and national management. Improved international and domestic chemicals management may help to reduce negative environmental and human health effects stemming from the use and mishandling of hazardous chemicals, for example. Cooperative efforts can also help prevent additional environmental dispersal of dangerous chemicals through the dissemination of alternative techniques and chemical substitutes. These and other management improvements are badly needed. Data from all over the world demonstrate that we are a long way from chemical safety, despite the fact that we are rapidly approaching the 2020 target for the safe production and use of chemicals adopted at the WSSD.

The Regime for Chemicals Management

The chemicals regime, designed to mitigate environmental and human health problems, has received little scholarly attention despite its importance.² It is, however, one of the oldest environmental regimes, having been in continuous development since the 1960s (and scattered international actions on hazardous substances have been taken for over a century). Countries in close collaboration with a multitude of organizations have expanded the chemicals regime to include regulations on the full life cycle of production, use, trade, and disposal of a limited number of industrial chemicals and pesticides, as well as emission controls on by-products of production and combustion processes. The chemicals regime

also contains provisions and management programs designed to assess and regulate additional chemicals, increase and harmonize information about commercial and discarded chemicals traded across countries, and augment regional and local management capacities. In addition, regime participants have established supportive organizational structures to aid implementation and regime development.

The chemicals regime is structurally different from many other major regimes that follow the “convention-cum-protocol” approach (Susskind 1994). In those cases, the creation of a framework convention outlining general policy goals is followed by the development of more detailed policies codified in protocols. For example, the ozone regime was formalized through the Vienna Convention for the Protection of the Ozone Layer and later expanded by the adoption of the Montreal Protocol on Substances That Deplete the Ozone Layer and subsequent amendments.³ The climate change regime is developed under the United Nations Framework Convention on Climate Change. Current political efforts focus on launching a successful follow-up agreement to the Kyoto Protocol, which will expire in 2012. The biodiversity regime is structured around the Convention on Biological Diversity and the Cartagena Protocol on Biosafety. In these and other similar cases, the framework convention creates a central focal point for subsequent policymaking and management efforts.

In contrast, legal and political efforts to address hazardous chemicals did not begin with a framework convention. Instead, countries have created a set of free-standing treaties that are nonhierarchical in the sense that no one treaty is supreme over the others under international law. The chemicals regime encompasses four main multilateral agreements addressing overlapping life cycle issues: the 2001 Stockholm Convention on Persistent Organic Pollutants, the 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, the 1998 Protocol on Persistent Organic Pollutants to the Convention on Long-Range Transboundary Air Pollution (CLRTAP), and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Although these treaties are formally independent, they are legally, politically, and practically connected. In addition, many other regional agreements address hazardous chemicals in multiple ways.

While there were discussions in international political forums in the 1990s about creating a framework convention to bring together existing chemicals treaties, most countries rejected this idea. Opponents argued that it would be too complex, costly, and time-consuming to negotiate a framework convention. Critics also believed that it would be a backward way of approaching governance. A framework convention was something to start with, they held, not create halfway through a long process of establishing legal commitments (Krueger and H. Selin 2002). Governments in 2006, however, adopted the Strategic Approach to International Chemicals Management (SAICM). Although SAICM is not a legally binding agreement, it shares many traits with a framework convention. It is designed as an umbrella mechanism to guide different management efforts as it outlines a plan of action toward fulfilling the 2020 goal formulated at the WSSD. To this end, it prioritizes several key issues, including increasing information and awareness of hazardous chemicals, and enhancing domestic enforcement and management capabilities.

Despite the fact that the leading legal, political, and management responses to hazardous chemicals are formally independent, the cognitive and practical reasons to regard them as part of a regime are compelling. Cognitive reasons stem from the fact that leading states, intergovernmental organizations (IGOs), and nongovernmental organizations (NGOs) perceive the major chemicals issues to be closely connected. They act and formulate policy responses and management efforts based on these conceptual linkages. This is illustrated by political and administrative decisions under separate treaties to connect related activities and by the creation of SAICM. In addition, states, IGOs, and NGOs realize that many policy and management outcomes are practically linked with actions and decisions across forums. That is, policy making and management under one instrument shape debates and actions in other policy forums. In this respect, the expansion of the chemicals regime reflects a growth in the number and scope of agreements across a range of environmental domains.

Scholars have called attention to “treaty congestion” issues (Brown Weiss 1993, 679). Growing institutional density creates a need to explore and analyze characteristics and implications of institutional linkages, as most early regime analysis focused on empirical cases consisting of a single international agreement administered by a discrete organiza-

tion. The increasing number and scope of institutions create a growth in governance linkages both within and across policy arenas. Governance linkages exist when principles, norms, rules, and decisions in one forum affect activities and outcomes in another (H. Selin and VanDeveer 2003). For example, efforts to phase out the use of ozone-depleting substances overlap with action on climate change mitigation, as some chemicals that are addressed under the ozone regime are also greenhouse gases. Similarly, policy making on desertification, deforestation, and biodiversity in a host of forums intersect with one another, as well as with activities on the use of carbon sinks under the climate change regime.

In addition, states, IGOs, and NGOs interacting within and across policy forums create important actor linkages (H. Selin and VanDeveer 2003). Many of the same actors collaborate under separate environmental treaties. For example, all major participants in the ozone regime also work together under the climate change regime. Similarly, there are great overlaps in the parties, observers, and other stakeholders who are interacting under different chemicals treaties, programs, and management efforts. This includes collaboration between treaty secretariats on shared issues and administrative tasks. Importantly, all these regime participants are engaged in linkage politics to varying degrees. That is, individual or sets of regime participants at times attempt to strategically use governance and actor linkages to forward their interests and positions across policy forums. This may include trying to secure the adoption of particular policies that they favor, as well as acting to block specific policy developments that they oppose.

Many governance and actor linkages have significant implications for multilevel governance and collective problem solving. Issues of multilevel governance—involving actors operating across horizontal and vertical levels of social organization and jurisdictional authority—have become increasingly important across issue areas as interrelated governance efforts are being developed simultaneously in multiple forums ranging across global, regional, national, and local scales. Horizontal linkages operate between instruments and programs at similar levels of social organization. For example, there can be many governance and actor linkages between two or more global treaties, as seen under the chemicals regime. In addition, vertical linkages exist between instruments and management activities at different levels of social organization. For example, ample

governance and actor linkages exist among global, regional, national, and local regulations and management efforts on hazardous chemicals.

To be effective, a regime must ultimately achieve its governance objective (Faure and Lefevre 2005, Underdal 2008). Although the stated policy goals of different chemicals treaties and programs are not identically worded, it is clear that successful environmental and human health protection is a core objective of the chemicals regime. The adoption of several policy statements and the WSSD 2020 goal of ensuring that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment reinforce this regime objective. SAICM was also established to work toward this policy goal. The realization of this regime objective is fundamentally dependent on the creation of comprehensive multilevel governance structures. That is, the effectiveness of the chemicals regime depends on the ability of regime participants to develop and implement suitable policies and management structures within and across global, regional, national, and local governance scales.

As governance and actor linkages within and across governance scales create new needs for collaborative problem solving, policy makers are exploring ways to harness regulatory synergies (Chambers 2008). Many implications of institutional linkages, however, are not well understood. The chemicals regime offers a fitting and largely overlooked case to examine linkage issues relating to policy making and management also critical to many other issue areas and governance efforts. States, IGOs, and NGOs collaborating under the chemicals regime have been dealing for several decades with many of the linkage issues that other issue areas have come to grapple with only more recently. Such linkages may have both positive and negative effects on governance efforts. As a result, studying policy issues and management experiences under the chemicals regime can lead to analytical and policy-relevant insights into the characteristics and effects of growing institutional density in global governance.

Aim of the Book

The aim of this book is twofold. First, it empirically investigates and analytically examines the development, implementation, and future of the chemicals regime as a critical but understudied area of global gover-

nance. Second, drawing on this analysis, it highlights and explores issues of policy expansions, institutional linkages, and the design of effective multilevel governance. The book thus examines issues of how policy developments, driven by coalitions of regime participants, create linkages between policy instruments addressing overlapping issues. It also considers how institutional linkages shape the interests and behavior of regime participants, as well as affect policy making and management efforts across governance scales. Specifically, the book addresses three interrelated research questions, focusing on analytical themes of coalitions, diffusion, and effectiveness. International relations scholars and practitioners in multiple issue areas are well advised to think more deeply about these themes and related issues.

The first question focuses on building actor coalitions for policy change: *How do coalitions of regime participants form in support of policy expansions, and how are their interests and actions affected by institutional linkages?* International chemicals policy has been significantly expanded by a large number of states, IGOs, and NGOs since the 1960s. The interests and actions of competing coalitions of regime participants, frequently engaging in linkage politics, have driven many of these policy expansions. However, the interests and compositions of coalitions change over time, and different coalitions are established for different policy issues. In addition, cognitive and practical linkages across multilateral forums and management efforts shape coalition politics and policy outcomes. Building on this general acknowledgment, the book analyzes in more detail ways in which institutional linkages affect the interests of regime participants and decision making across policy forums.

Much early literature focused on identifying and cataloging different types of linkages between institutions, but it often overlooked the role of regime participants in linkage politics (H. Selin and VanDeveer 2003). There is a need for empirical studies that explore the actions of regime participants in creating and developing institutional linkages. Going beyond mere descriptions of institutional linkages, this book focuses on the role of coalitions of regime participants as leaders and carriers of ideas, knowledge, and policy proposals across policy venues, thereby establishing and shaping many institutional linkages. In addition, it examines how institutional linkages influence interests and actions by regime participants, another area of linkage politics that much of the literature has

ignored. To this end, this book explores the role of coalitions of regime participants in linkage politics and global governance, which are also issues of interest in many other areas where policy expansions are taking place across policy venues.

The second question focuses on the establishment and development of regime components: *How do regime participants diffuse regime components across policy venues, and how are policy diffusion and expansion efforts shaped by institutional linkages?* The many states, IGOs, and NGOs collaborating on chemicals issues have established a host of principles, norms, rules, and decision-making procedures to guide individual and collective behavior. Many regime rules have been strengthened through policy expansions across related instruments. At the same time, there have been (and continue to be) notable political differences among different coalitions of regime participants about major policy issues, including controls on specific chemicals, mechanisms for monitoring and compliance, and the organization and funding of capacity building. Whereas much regime analysis focuses on policy making taking place exclusively within the confines of a particular forum, a study of the chemicals regime must take into consideration the influence of institutional linkages.

To this end, this book examines how institutional linkages influence policy-making processes driven by coalitions of participants under the chemicals regime. It focuses on the emergence and diffusion of components that have been critical in the development and implementation of different parts of the chemicals regime, such as the movement from voluntary to legally binding approaches, the role of the precautionary principle and scientific assessments in decision making and regulation, the application of common but differentiated responsibilities, the strengthening of collective rules and commitments, the design of bodies for assessments and decision making, funding issues, and the design of capacity-building structures and programs. These issues are also of analytical and practical importance in many policy areas beyond the chemicals regime, and this study illuminates how the diffusion of regime components may influence governance efforts more generally.

The third question focuses on issues of governance and regime operation: *How do institutional linkages influence the effectiveness and design of multilevel governance efforts?* At least since the United Nations Conference of the Human Environment and the establishment of the United

Nations Environment Programme (UNEP) in 1972, public officials have attempted to integrate policy measures that address different aspects of the same environmental issue (Chambers 2008). The growth in institutional linkages operating both horizontally and vertically also increases the importance of issues of institutional fit and design (Young 2002, 2008a): an effective regime needs to be well matched to the specific environmental characteristics of the issues that it seeks to address, as well as flexible enough to be able to respond to changes in physical and political conditions. Issues of linkages, fit, and design are of growing importance in many issue areas, and this book explores how horizontal and vertical linkages influence efforts to design successful governance structures between and across different levels of social organization.

On multilevel governance in the area of chemicals management, analysts and policy makers have noted the importance of closer horizontal and vertical coordination across the many instruments and organizations addressing hazardous chemicals. In fact, the UNEP Governing Council in the 1990s identified the chemicals area as a particularly suitable pilot project for exploring opportunities for clustering agreements and enhancing regulatory and management synergies between and across governance levels. This is also a key objective of SAICM. However, efforts to improve multilevel governance and strengthen regional and local management capabilities are plagued by practical difficulties and political disagreements. Many multilevel governance consequences of institutional linkages also remain understudied. Recognizing the need to further study implications of institutional linkages, this book explores issues critical to the design and implementation of effective multilevel governance efforts, empirically focusing on the management of hazardous chemicals.

Scholarly Contribution and Main Arguments

This book connects with several analytical and policy debates. First, it contributes to a small but growing literature on chemicals management. Some of these studies address the political economy of the trade in hazardous chemicals and wastes and the development of international and national policy responses (Alston 1978; Harland 1985; Boardman 1986; Forester and Skinner 1987; Paarlberg 1993; Kempel 1993; Kummer 1995; Victor 1998; Pallemmaerts 1988, 2003; Asante-Duah and Nagy

1998; Krueger 1999; O'Neill 2000; Clapp 2001; Sonak, Sonak, and Giriyani 2008; Dreher and Pulver 2008; Yang 2008). Other studies examine global and regional efforts to mitigate the transboundary transport of hazardous chemical emissions, typically focusing on one or two specific treaties (H. Selin 2003, Downie 2003, H. Selin and Eckley 2003, H. Selin and VanDeveer 2004). Another area of literature addresses justice and equity issues in the context of the international trade in hazardous substances and wastes (Iles 2004, Pellow 2007). In contrast, this book analyzes the creation and development of the entire chemicals regime rather than focusing on individual cases or treaties. It thus seeks to contribute to understanding how different chemicals issues and policies are related.

Second, this book adds to the literature on science and politics in international environmental cooperation. Science shapes environmental politics, although the relationship between organized scientific work and policymaking is complex (P. Haas 1990, 2004; Jasanoff and Wynne 1998; Bäckstrand 2001; Parson 2003, Jasanoff and Martello 2004; Schroeder, King, and Tay 2008; Young 2008b). Scientific debates and assessments are at the forefront of many policy processes on chemicals, including the use of scientific advisory bodies (Kohler 2006). This book builds on scholarly work on knowledge creation and environmental assessments (Farrell and Jäger 2005, Mitchell et al. 2006) as it presents new empirical findings on how assessment information is generated and diffused across policy forums, affecting outcomes. Closely related to these issues, this study also contributes to the literature on precaution (O'Riordan and Cameron 1994, Sandin et al. 2002, Harremöes et al. 2002, Eckley and H. Selin 2004; Maguire and Ellis 2005; Whiteside 2006). Specifically, the book examines the role of the precautionary principle in international assessments and regulations of hazardous chemicals and how debates about the precautionary principle are carried across forums and shape policymaking.

Third, the book contributes to the literature on regimes and institutional linkages. Scholars have analyzed the creation, operation, and effectiveness of environmental regimes for decades (Krasner 1983; Young 1989, 1991a; Haas, Keohane, and Levy 1993; Levy, Young, and Zürn 1995; Victor, Raustiala, and Skolnikoff 1998; Joyner 1998; Wettestad 2001; Breitmeier, Young, and Zürn 2006; Young, King, and Schroeder 2008). Furthermore, analyses of institutional linkages examine political

and functional characteristics and implications of related policy and management efforts within and across different geographical scales, forums, and instruments (Stokke 2001, Young 2002, H. Selin and VanDeveer 2003, Raustiala and Victor 2004, Oberthür and Gehring 2006; Gehring and Oberthür 2008; Chambers 2008). Much of this literature focuses on horizontal linkages, creating a need to pay more empirical and analytical attention to vertical linkages. This book analyzes both horizontal and vertical linkages. In doing so, it puts regime participants at the center of analysis, in contrast to the largely structurally oriented early literature on institutional linkages.

Fourth, related to the importance for scholars to study characters and implications of horizontal and vertical linkages, this book is part of a growing literature on multilevel governance. Much of the early literature on multilevel governance focused on policy developments within the European Union (EU) (Marks 1992, 1993; Hooghe 1996). Since then, multilevel governance analyses have been expanded to address cross scale policy developments in other regions, as well as connections among governance levels from the global to the local (Betsill and Bulkeley 2006; N. Selin and H. Selin 2006; Young, King, and Schroeder 2008; H. Selin and VanDeveer 2009). By analyzing the development of the chemicals regime, which is more complex than many other environmental regimes, this book contributes to our understanding of multilevel governance. While better-covered regimes structured around a framework convention have a relatively clear political center at the top, the chemicals regime lacks a single focal point. This study thus focuses on an empirical case where there is no well-defined apex of the governance structure, which creates particular governance challenges.

In short, the book demonstrates that policy developments on chemicals have frequently been driven by coalitions of states, IGOs, and NGOs formed around shared interests. These coalitions often engage in linkage politics. For example, many early policy developments focused on international trade issues and were pushed by a coalition of developing countries together with IGOs and NGOs seeking trade restrictions as a means to prevent foreign dumping of hazardous wastes and chemicals in their countries. In addition, a group of Northern countries in the early 1990s pushed issues of the long-range transport of hazardous chemical emissions onto the political agenda. Many of these actions targeted chemicals

that had been phased out in most industrialized countries but were still in use in developing countries. This difference in focus between local management problems and transboundary pollution issues caused political tensions, but also created possibilities for bargaining and policy compromise across policy forums and regulatory instruments.

Institutional linkages frequently shape interests and actions of regime participants. Scientific and political debates and policy developments in one chemicals forum are not separate from those in another one simply because the forums are formally independent. In fact, a major characteristic of the chemicals regime is that coalitions of regime participants use agreements on particular rules and practices in one policy forum to leverage similar outcomes in another policy arena. This can, for example, be seen with respect to the diffusion of the principle of prior informed consent (PIC) addressing trade issues as well as the regulation of specific chemicals under multiple treaties. These policy diffusions are sometimes positive, as regime participants capture synergetic effects through the deliberate use of institutional linkages. In such cases, the strategic exploitation of institutional linkages facilitates decision making that results in complementary policy developments and management efforts across different parts of the regime.

Nevertheless, the effects and outcomes of institutional linkages are not always synergetic. The chemicals case also demonstrates that just as easily as institutional linkages can be used to diffuse complementary ideas and policies across forums, they can also be used to transfer political differences and struggles from one arena to another. In such instances, institutional linkages in effect make it more difficult to reach an agreement in one forum because unresolved conflicts are spilling over from a different one. This is, for example, the case with ongoing political debates across multiple forums about the establishment of more comprehensive mechanisms on monitoring, compliance, and capacity building. On these issues, coalitions of regime participants express diverging opinions as political stalemates permeate across policy forums. Related to these issues, participants in chemicals management are also struggling to better coordinate and link different management schemes toward improved governance.

Given these considerations, what are the major lessons from the chemicals case for other governance efforts? One major message is that increas-

ing institutional density is likely to directly affect regime participants' interests and strategies. That is, states, IGOs, and NGOs not only think about their interests and strategies in the context of what is going on in one forum, but also how choices and actions in that forum will affect their interests and policy outcomes in other policy arenas and regime development efforts more broadly. It is also important to realize that institutional linkages are not automatically positive or negative. Whether institutional linkages will end up facilitating or hindering problem-solving efforts depends ultimately on how participants engaged in multiple forums view and elect to use those linkages. Finally, an increase in institutional density and linkages highlights the need to effectively link management efforts across global, regional, national, and local governance scales. All of these issues are discussed in the concluding chapter.

The remainder of this chapter gives a brief introduction to global chemicals policy and provides an overview of the structure of the book.

Global Chemicals Policy in Brief

The chemicals regime consists of a multitude of formally independent but functionally dependent treaties and programs. SAICM is designed to guide cooperative efforts and set policy objectives for enhanced environmental and human health protection, linking governance efforts across the chemicals regime. Three global treaties (the Basel Convention, the Rotterdam Convention, and the Stockholm Convention) and one regional treaty (the CLRTAP POPs Protocol) constitute the core of the chemicals regime, covering overlapping parts of the life cycle (see table 1.1). While other regional agreements do not receive the same amount of attention, the CLRTAP POPs Protocol is included even though it is regional in scope because of its importance in international chemicals management and its strong policy and management linkages to the three global treaties (in particular the creation and implementation of the Stockholm Convention).

In the life cycle management of hazardous chemicals, the Basel Convention regulates the transboundary movement and disposal of discarded or used chemicals if they fall under the treaty's definition of hazardous wastes. It furthermore recognizes the importance of waste minimization. The Basel Convention was adopted in 1989 and entered into force in

Table 1.1

Summary of the four main treaties on chemicals management

<p>Basel Convention: Adopted in 1989; entry into force in 1992; 172 parties as of 2009</p>	<ul style="list-style-type: none"> • Regulates the transboundary movement and disposal of hazardous wastes; covers chemicals if they fall under the treaty's definition of hazardous wastes. • Subjects hazardous waste transfers to a PIC procedure where an importing party must give explicit consent before shipment. • Prohibits exports of hazardous wastes to Antarctica and to parties that have taken domestic measures banning imports. • Exports of hazardous wastes to nonparties must be subject to an agreement at least as stringent as the Basel Convention. • The 1995 Ban Amendment (not yet in force) bans export of hazardous wastes from parties that are members of the OECD or the EU, as well as Liechtenstein, to other parties. • The 1999 Protocol on Liability and Compensation (not yet in force) identifies financial responsibilities in cases of waste transfer accidents. • Basel Convention regional centers address management and capacity-building issues.
<p>Rotterdam Convention: adopted in 1998; entry into force in 2004; 128 parties as of 2009</p>	<ul style="list-style-type: none"> • Regulates the international trade in pesticides and industrial chemicals using a PIC scheme. • Covered forty chemicals by 2009. • Requires an exporting party to receive prior consent from an importing party before exporting a regulated chemical. • Obligates parties to notify the secretariat when they ban or severely restrict a chemical. • Contains a mechanism for evaluating and regulating additional chemicals under the treaty.
<p>CLRTAP POPs Protocol: Adopted in 1998; entry into force in 2003; 29 parties as of 2009</p>	<ul style="list-style-type: none"> • Regulates the production and use of POP pesticides and industrial chemicals. • Outlines provisions for the environmentally sound transport and disposal of POPs stockpiles and wastes. • Sets technical standards for controlling emissions of by-product POPs. • Regulated sixteen chemicals by 2009. • Contains a mechanism for evaluating and regulating additional chemicals.
<p>Stockholm Convention: Adopted in 2001; entry into force in 2004; 163 parties as of 2009</p>	<ul style="list-style-type: none"> • Regulates the production, use, trade, and disposal of POP pesticides and industrial chemicals. • Sets technical standards for controlling the release of by-product POPs. • Contains a mechanism for evaluating and regulating additional chemicals. • Regulated twenty-one chemicals by 2009. • Stockholm Convention regional centers support capacity building and implementation.

1992. By late 2009, 171 countries and the EU were parties, making the convention one of the most widely ratified multilateral treaties in the world. The Basel Convention prohibits export of hazardous wastes to Antarctica and to parties that have taken domestic measures to ban imports. Hazardous waste transfers from one party to another are subject to a strict PIC procedure, under which a party must give explicit consent to a waste import before a shipment can take place. Exports of hazardous wastes to nonparties must also be subject to an agreement at least as stringent as the Basel Convention.

Basel Convention regulations have been strengthened over time. The Basel Ban Amendment, which prohibits export from Annex VII countries—members of the Organisation for Economic Cooperation and Development (OECD), EU countries, and Liechtenstein—to all other parties (mostly developing countries) was adopted in 1995. The 1999 Protocol on Liability and Compensation addresses who is financially responsible in instances of incidents and damages resulting from the transfer of hazardous waste covered by the convention. However, neither of these agreements has yet entered into force. Parties have also developed guidelines for the management of particular waste streams, including e-wastes, which in many cases contain hazardous chemicals. In addition, fourteen Basel Convention regional centers located in different parts of Latin and South America, Africa, Asia, and Europe have been established to aid implementation and capacity building.

The Rotterdam Convention focuses on the international trade in commercial industrial chemicals and pesticides. Based on an earlier voluntary PIC mechanism, the convention was adopted in 1998 and entered into force in 2004. By late 2009, 126 countries and the EU were parties. The Rotterdam Convention is designed principally to assist developing countries in deciding whether to permit the import of a specific chemical by increasing their access to information about hazardous chemicals that are subject to trade. Chemicals listed in the treaty can be exported from one party to another only after prior consent by the importing party. Parties are obligated to notify the convention's secretariat when they ban or severely restrict a chemical, so that information may be made available to other parties. The Rotterdam Convention also includes a mechanism for the evaluation and possible inclusion of additional chemicals; by 2009, the treaty covered forty chemicals.

The CLRTAP POPs Protocol operates under the auspices of the United Nations Economic Commission for Europe (UNECE), which comprises North America and Europe as far east as Russia and Kazakhstan. The agreement was signed in 1998 and entered into force in 2003. By late 2009, twenty-eight countries and the EU were parties. The protocol is designed to reduce the release and long-range transport of POP emissions. To this end, the protocol regulates the production and use of POP pesticides and industrial chemicals and controls the environmentally sound transport and disposal of POP stockpiles and wastes. It also sets technical standards and guidelines for controlling emissions of POPs that are generated as by-products. By 2009, sixteen chemicals were subject to regulations. The protocol also has a mechanism for evaluating additional chemicals for possible controls; several more POPs are on track to be regulated under it.

The Stockholm Convention targets the production, use, trade, and disposal of commercial POPs, as well as the release of POP by-products. The treaty was adopted in 2001 and entered into force in 2004. By 2009, 161 countries and the EU were parties. The Stockholm Convention regulates the production and use of POP pesticides and industrial chemicals. Parties are required to ban the import or export of controlled POPs except for purposes of environmentally sound disposal. On issues of the trade in discarded POPs and their disposal, the Stockholm Convention refers to the Basel Convention. Parties should also minimize releases of by-product POPs. By late 2009, the Stockholm Convention regulated twenty-one POPs, and several other chemicals are in the process of evaluation for possible controls through a treaty mechanism. Furthermore, parties are working to establish regional centers to support capacity building and implementation.

In addition, many regional agreements developed since the 1960s address hazardous chemicals in different ways. A large number of these are designed to protect shared seas and lakes against chemical pollution and dumping (including from many of the same chemicals that are covered by the four main treaties). Under the Regional Seas Programme run by UNEP, thirteen action plans targeting a long list of pollutants had been established by 2009, involving over 140 countries. In addition to these UNEP-led actions, regional agreements covering, for example, the North-east Atlantic, the Baltic Sea, and the North American Great Lakes contain

regulations on a wide range of hazardous chemicals. A growing number of treaties covering transboundary rivers all over the world also contain pollution-prevention measures. Furthermore, countries in several regions have created separate waste management agreements, sometimes in response to the Basel Convention.

Overview of the Book

The following seven chapters address a multitude of global governance issues with an empirical focus on the development of the chemicals regime. To this end, the book provides an in-depth analysis of key stakeholders and issues in the creation and implementation of the four major multilateral treaties that form the core of the chemicals regime: the Basel Convention, the Rotterdam Convention, the CLRTAP POPs Protocol, and the Stockholm Convention. The book also discusses how these four treaties relate to other agreements and programs that address hazardous chemicals in different ways. In analyzing the four major treaties, each treaty chapter explores key issues of policy expansions, institutional linkages, and the design of effective multilevel governance

Chapter 2 outlines a framework for analyzing multilevel governance and institutional linkages on chemicals. The chapter begins with a discussion of institutions and actors in regime analysis with a focus on the chemicals regime. This is followed by a discussion on important characteristics of multilevel governance and the influence of institutional linkages—separated into governance and actor linkages—on chemicals policymaking and management. It provides as well an overview of the main components of the chemicals regime, divided into principles, norms, rules, and decision-making procedures. This discussion relates specific regime components to issues of chemicals management, institutional linkages, and multilevel governance, which are examined in more detail in subsequent chapters. The chapter ends with a discussion about science and policy interplay issues under the chemicals regime.

Chapter 3 provides a historical perspective on the rise of scientific awareness and public concern about hazardous chemicals and the development of related policy and management efforts. The chapter begins by examining early action by states and IGOs on hazardous chemicals from the 1960s to the late 1980s, focusing on improving information gather-

ing and the harmonization of domestic and international regulations of a few hazardous substances. This is followed by a discussion of the development of a more comprehensive chemicals policy, including the adoption of several multilateral treaties over the past two decades, culminating in ongoing efforts on improving the implementation and effectiveness of existing instruments, including through SAICM. Building on this discussion, chapters 4 to 7 focus on the four main international treaties addressing chemicals issues to date.

Chapter 4, which analyzes the Basel Convention, begins with a discussion of global waste trade issues, including chemicals wastes. This is followed by an analysis of the development and shift in the 1980s from a voluntary PIC policy on hazardous wastes to a mandatory procedure in the Basel Convention. This is continued by an examination of the implementation of the convention, highlighting several institutional linkages and multilevel governance issues, including the incorporation of the PIC principle for managing trade and related efforts to strengthen controls; the development of technical guidelines for waste management; the operation of regional centers for implementation and capacity building; and the establishment of mechanisms for liability, monitoring, and compliance. The chapter ends with a discussion of issues critical to the continued strengthening of hazardous waste management under the Basel Convention.

Chapter 5 examines the Rotterdam Convention. It starts by discussing policy and management issues relating to the trade in chemicals and then examines the establishment of a voluntary PIC procedure in the 1980s. Next, the chapter analyzes the decision by the international community to create the Rotterdam Convention and early implementation efforts. The chapter identifies several institutional linkages and multilevel governance issues, including the establishment of a PIC principle for managing trade, the creation of the Chemical Review Committee for evaluating additional chemicals for possible controls, the generation and structuring of financial and technical assistance, and efforts to develop mechanisms for monitoring and compliance. The chapter ends with a discussion of major challenges and opportunities for more effective management of the trade in hazardous chemicals under the Rotterdam Convention.

Chapter 6 analyzes the CLRTAP POPs Protocol. It begins with an examination of the rise of the POPs issues on the international agenda in the

late 1980s, followed by an analysis of the CLRTAP scientific assessment work and the subsequent political negotiations resulting in the POPs protocol. Next, the chapter examines implementation efforts to date. It highlights several institutional linkages and multilevel governance issues, including the scientific and political framing of the POPs issue; the assessment and development of management options for specific POPs; and the creation of a review committee to evaluate additional chemicals that may be regulated under the protocol. The chapter ends with a few comments on major management issues related to the continuous implementation of the CLRTAP POPs Protocol and how these are linked to other instruments under the chemicals regime, including the Stockholm Convention.

Chapter 7 focuses on the Stockholm Convention. It begins by examining the elevation of the POPs issue from the regional level to the global level in the 1990s. It then analyzes the global POPs scientific assessment work and the negotiations of the Stockholm Convention. Next, the chapter examines early efforts on implementing the convention. It discusses several institutional linkages and multilevel governance issues, including the expansion of regional CLRTAP POPs controls to the global level; the formation of the Chemical Review Committee for the evaluation of additional chemicals; the creation and funding of organizational structures supporting capacity building; and the establishment of mechanisms for monitoring and compliance. The chapter ends with a discussion of major issues related to the continued implementation of the Stockholm Convention.

Finally, chapter 8 brings together main insights and arguments from earlier chapters on the development and implementation of the individual treaties. The chapter begins with a summary of the chemicals regime. Following this, it returns to the three research questions outlined in this chapter. Answering these research questions in turn, it highlights key roles of coalitions of states, IGOs, and NGOs in policymaking across policy forums, as well as how institutional linkages shape policy expansion efforts and multilevel governance. The next section identifies and discusses four governance issues important for improving the management of hazardous chemicals and fulfilling the goal set at the WSSD on achieving safe production and use of chemicals no later than 2020. The chapter—and the book—ends with a few concluding remarks on some major lessons that can be drawn from the chemicals case.