
Introduction

Institutional Interaction in Global Environmental Change

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The Institutional Dimensions of Global Environmental Change (IDGEC) project was of central importance for research on the role of institutional interaction or interplay in global environmental change.¹ From 1998 to 2007, IDGEC formed one of the core projects of the International Human Dimensions Programme of Global Environmental Change (IHDP). Its 1998 Science Plan (Young et al. 1999/2005) put institutional interplay on the agenda of global change research after a few scholars pointed to the risk of “treaty congestion” (Brown Weiss 1993, 679) and to an increasing “regime density” (Young 1996, 1) in the international system. Since then, research on institutional interplay has made important progress, both conceptually and empirically. However, there remain some important areas of the research agenda on institutional interaction that promise high returns on investment in further research (Gehring and Oberthür 2008).

As one of the main legacies of IDGEC, the present volume aims to advance our understanding of interinstitutional influence and its consequences by focusing on two areas in particular need of further research. First, the contributors investigate how states and other actors, individually and collectively, go about improving interinstitutional synergy or avoiding disruption, and what factors condition their success. They thus examine the crucial issue of the management of institutional interaction (*interplay management*). Second, the book asks what forces drive the emergence and change of so-called *institutional complexes*—complex interaction situations in which two or more international institutions interact to cogovern issue areas in international relations (Raustiala and Victor 2004) and form interlocking structures (Underdal and Young 2004, 374–375) of global governance. This exploration of institutional complexes includes an investigation of how competing concerns are balanced and what factors account for stability and change.

This introduction lays the conceptual foundations for the book and provides an overview of its structure and contents. First we introduce four core concepts that inform the individual contributions and allow investigation of the two central themes of the volume. In this way we establish our understanding of international institutions, institutional interaction, interplay management, and institutional complexes. We then outline the structure of the book and offer a brief overview of the content of each chapter.

International Institutions

Institutions are “persistent and connected sets of rules and practices that prescribe behavioral roles, constrain activity, and shape expectations” (Keohane 1989, 3). They include “negotiated” arrangements that governments and others deliberately establish in order to shape policy outcomes and behavior, as well as “spontaneous” institutions (Young 1982) that emerge, much as customary law does, from practice and interaction. From a governance perspective, negotiated institutions are of particular interest because they may be employed instrumentally to bring about change and influence outcomes. Consequently, they have been the major focus of the literature on international institutions in global environmental governance (see, e.g., Haas, Keohane, and Levy 1993; Victor, Raustiala, and Skolnikoff 1998; Miles et al. 2002; Oberthür and Gehring 2006a). The essays in this book mainly deal with negotiated institutions.

Negotiated international institutions have two components. First, they comprise substantive rules and obligations that indicate socially desirable behavior. These norms are the principal instruments of governance that may affect addressee behavior and have an impact on the issue in question. Second, unlike spontaneous institutions, negotiated institutions typically set out procedural rules for how participants are to make and implement decisions or change substantive provisions (Young 1980; Gehring 1994). Decision rules and other parts of an institution’s procedural component can be vital for its ability to adapt and respond to changes in the issue area it regulates, or in the state of knowledge on that area. And in environmental governance, such changes can be frequent and rapid (Young et al. 1999/2005).

We consider both international regimes and international organizations as international institutions. International regimes are the subset of institutions that involve states and concern behavior within specific issue areas (Levy, Young, and Zürn 1995). International organizations may

also govern specific issue areas, but their distinctive features are the actor qualities that contracting states have endowed them with, such as a physical location, a staff of employees, and usually a legal personality (Young 1986, 110). Accordingly, an international organization is a possible but not a necessary part of the procedural components of an international regime. For example, the World Trade Organization (WTO) serves as an instrument for operating the global trade regime, and the International Maritime Organization (IMO) and the United Nations Environment Programme (UNEP) provide a range of services to numerous international regimes within their respective functional remits. Unlike these, the climate change regime has established a specialized administrative structure, located in Bonn, Germany. Like the IMO and UNEP, it forms part of the UN system of organizations.

Clarifying the use of these terms should help facilitate communication among scholars and practitioners from various disciplines, as well as those who use different conceptual frameworks. Beyond the common denominator of regimes and organizations both being international institutions (see also Martin and Simmons 1998; Simmons and Martin 2002), organizations are regarded by some (including some of the contributors to this volume) primarily as procedural and administrative frameworks for decision making, guided by a shared objective, whereas others emphasize that some organizations also include substantive rules and norms governing a particular area of international relations. Hence, in this book we do not draw a sharp distinction between international regimes or institutions and international organizations, as some other segments of relevant research do (e.g., Biermann and Siebenhüner 2007; Young 2008).

International regimes and international organizations both form part of our research agenda on institutional interplay. Up until the 1970s, international organizations such as the UN Food and Agriculture Organization (FAO), the UN Industrial Development Organization, and the IMO were the major subjects of research on international institutions (Martin and Simmons 1998). Then the focus shifted to international regimes and their formation, development, and effectiveness (e.g., Krasner 1982; Keohane 1984; Gehring 1994; Young 1999; Miles et al. 2002). More recently, international administrations and bureaucracies have attracted increasing research attention (Biermann and Siebenhüner 2009; Young 2010). Since international regimes and international organizations often complement each other, it is useful to take both into account in exploring the institutional framework of global governance.

There is nothing sacrosanct about our way of conceptualizing the field. However, the clarifications above should assist the reader in better grasping the research agenda that underlies this volume. This agenda includes the full range of interaction across institutional boundaries, whether it concerns substantive international rules, decision-making processes, or related administrative structures (secretariats, other bodies). We refer to all these phenomena as “institutional interaction” or “interplay.”

Institutional Interaction: The Starting Point

Institutional interaction or interplay arises in situations in which one institution affects the development or performance of another institution. For example, WTO rules and procedures on free trade have constrained the willingness and ability of parties to multilateral environmental agreements (MEAs) to design and implement trade restrictions that can support their collective environmental protection goals (see Axelrod in this volume; Gehring in this volume). In the field of environmental governance, the 1997 Kyoto Protocol to the UN Framework Convention on Climate Change created incentives for establishing fast-growing monocultural tree plantations in order to maximize carbon sequestration from the atmosphere, but this works against the goal of the 1992 Convention on Biological Diversity (CBD) to preserve the biological diversity of forest ecosystems (Pontecorvo 1999). In contrast to such disruptive interplay, the global regime on the transboundary movement of hazardous wastes has been strengthened as a result of numerous regional regimes that address the same environmental problem in complementary ways (Meinke 2002). Synergetic relationships can also be based in contingency relationships between institutions. For instance, the effectiveness of restrictions on trade in ozone-depleting substances under the Montreal Protocol was contingent on adaptation of the World Customs Organization’s harmonized system of customs codes, which were poorly equipped to single out products containing such substances (Oberthür 2001). Institutional interaction may involve institutions at the same level of governance (horizontal interplay) or at different levels, as with the relationship between international and national institutions (vertical interplay).

The mere coexistence or parallel but unrelated evolution of two or more institutions is less relevant to the study of institutional interaction: institutional interplay requires actual interinstitutional influence (see, e.g., King 1997; Stokke 2000; Oberthür and Gehring 2006a; Young

et al. 1999/2005). Such influence may concern regime dynamics—that is, the creation or maintenance of institutions, which may include normative development—or their consequences in various domains, including their effectiveness in addressing and resolving the problems that led to their creation in the first place.

The rise of institutional interplay as a subject of research in global governance is due to the growing density of the international institutional landscape, as is now well documented. The number of international treaties has increased steadily, from less than 15,000 in 1960 to more than 55,000 in 1997 (Zürn et al. 2007). Mitchell (2007) lists more than 900 multilateral agreements in the environmental area; hence, international environmental governance is one of the institutionally most fragmented areas of international law and policy (Beisheim et al. 1999). New agreements further expand the scope of international environmental regulation, in the 2000s covering additional issues such as trade in genetically modified organisms and persistent organic pollutants. States are continually entering into new treaties and elaborating or expanding existing ones, as illustrated by the regulatory expansion of the international climate change regime (Yamin and Depledge 2004) and the growing specificity of high-seas fisheries law (Stokke 2001a). With this growing number of institutions, any new arrangement enters an institutional setting that is already densely populated, so the scope for institutional interaction thus increases.

Institutional interplay has become a ubiquitous phenomenon in, and an important determinant of, international environmental governance (Oberthür and Gehring 2006c). Indeed, it is hardly surprising that research on institutional interplay has come to the fore of the institutional research agenda early in the twenty-first century. In the 1980s, research on international institutions focused on the formation and development of international regimes (Krasner 1982; Hasenclever, Mayer, and Rittberger 1997). It turned to the issue of institutional effectiveness in the 1990s, concentrating heavily on international environmental governance (Haas, Keohane, and Levy 1993; Stokke and Vidas 1996; Victor, Raustiala, and Skolnikoff 1998; Young 1999; Miles et al. 2002). Along with contributions by legal scholars (e.g., Leebron 2002; Wolfrum and Matz 2003; Vranes 2006), this work on institutional effectiveness forms the basis for ongoing research on institutional interplay and institutional complexes. Whereas effectiveness studies highlight the impacts individual institutions have within their own governance domain, institutional interaction revolves around the effects institutions have on each other.

As such, institutional interplay forms part of the broader consequences that institutions may have beyond their own domains (Underdal and Young 2004).

As Sebastian Oberthür and Thomas Gehring show in chapter 2, both conceptual and empirical research on institutional interaction has advanced tremendously since the second half of the 1990s. In particular, many empirical studies have shed light on the various facets of the relationship between the governance of trade and the environment, on ocean governance, and on climate change governance. These studies provide a rich array of empirical material that future work may further exploit and supplement. On this stronger empirical basis, conceptual progress has helped clarify several analytic categories that are now regularly employed in the study of institutional interplay. And, quite important, research has identified a range of causal mechanisms that can help us understand the driving forces and governance conditions that structure the realm of institutional interaction. These advances constitute promising first steps and a sound basis for further explorations of the field of institutional interplay and for advancing our understanding of global governance. They also provide the starting point of this volume.

Interplay Management

Interplay management refers to conscious efforts by any relevant actor or group of actors, in whatever form or forum, to address and improve institutional interaction and its effects (see also Stokke 2001b; Oberthür 2009). It usually involves the pursuit of collective objectives as enshrined in the institutions in question. The possibility for such management is inherent in the concept of institutional interplay. As regards negotiated institutions, interaction originates in political decisions made within one institution and can be influenced by decisions in an affected institution (Oberthür and Gehring 2006a). Furthermore, individual actors are often able to respond to such interaction and may shape its effects when implementing decisions. Whereas institutional interplay as such may occur even without the knowledge of the actors concerned, interplay *management* requires awareness of and reflection on the interaction.

The concept of interplay management differs from other closely related notions in the literature on institutional interaction. The IDGEC Science Plan introduced the concept of political linkages (in contrast to functional linkages), which “arise when actors decide to consider two or more arrangements as parts of a larger institutional complex” (Young

et al. 1999/2005, 62). This concept builds on Young's (1996) earlier notion of "clustering" as something that occurs when actors combine different governance arrangements in institutional packages even when there is no compelling functional need to do so. For example, the UN Convention on the Law of the Sea (UNCLOS) joins under one umbrella international regimes concerning navigation, fisheries, marine pollution, scientific research, and numerous more specific activities. Political linkage differs from interplay management by not requiring any preceding or anticipated interplay. States could decide, for instance, to integrate the Basel Convention on hazardous waste and the climate change regime within a World Environment Organization, even though institutional interaction between those first two regimes has been minimal so far. In such a case, interplay would result from clustering, rather than driving it. Furthermore, especially the notion of clustering but also the wider concept of political linkages connotes a predilection for institutional aggregation. In contrast, the notion of interplay management also encompasses, as will become clearer below, approaches with little or no cross-institutional coordination.

Interplay management differs also from the concept of policy response to interaction. A policy response is additional to the original institutional interplay: it occurs as a reaction to the effects of interaction (Gehring and Oberthür 2006, 314–316). In contrast, interplay management may also occur in anticipation of such effects, thereby co-constituting the original interaction. To illustrate, those who negotiated the compliance system of the Kyoto Protocol on climate change were anxious to avoid substantive or procedural elements that might contradict the international trade regime (Stokke 2004). Similarly, while the WTO significantly influenced the trade-related provisions of the Cartagena Protocol on Biosafety, parties to that protocol retained some room for maneuver, which they used for consciously managing the interplay with the global trade regime (Oberthür and Gehring 2006c). In some cases, members of an institution may even decide to reject pressure from another institution and deliberately opt for noninteraction as a means of interplay management (see Gehring in this volume). Policy responses to interaction thus form part of interplay management, but the latter is broader because it includes activities beyond policy responses.

Interplay management, moreover, implies a standard of evaluation. In contrast to concepts like political linkage, clustering, and policy response, "managing" something implicitly requires a goal or objective. Various standards may be applied. In research on global environmental change,

enhancing the effectiveness of global environmental governance is a prominent candidate (see, e.g., Stokke 2001b; Oberthür 2009), given the extensive research on this phenomenon (e.g., Haas, Keohane, and Levy 1993; Young 1999; Miles et al. 2002). In this volume, the contributions by Sebastian Oberthür, Claire Dupont, and Yasuko Matsumoto (chapter 5) as well as Olav Schram Stokke (chapter 6) explicitly apply this standard. Other standards may also prove fruitful. For example, institutional management may generally aim to enhance synergy and mitigate disruption among the institutions involved, without giving priority to environmental objectives. We may note the use of such a standard in the chapters by Harro van Asselt, Mark Axelrod, Stefan Jungcurt, Fariborz Zelli, and Thomas Gehring in this volume. Yet other standards applied in the evaluation of public policy or environmental institutions in particular reflect various notions of social justice and equity (international, intranational, or intergenerational), efficiency, or “good governance” (Young 1994; Mitchell 2008). On the basis of these general criteria, one may also develop multidimensional standards. Notably, Sylvia I. Karlsson-Vinkhuyzen and Marcel T. J. Kok (chapter 11) apply sustainable development as their standard. As with the wider field of research on the performance of environmental institutions, scope remains for expanding the criteria in use (Mitchell 2008). While any study of interplay management must be clear about the standard it applies, comparison of findings across interplay management studies is more powerful if the same standard has been applied.

A further dimension of interplay management concerns the instruments or means actors use to avoid or deal with disruptive interplay or to maximize synergy. In the literature on international and European governance, several categorizations of instruments have emerged, in particular with a view to distinguishing hierarchical regulatory approaches from “new modes” of governance that emphasize, among other things, participatory and informational means (Jordan, Wurzel, and Zito 2003; von Homeyer 2006). Similarly, distinctions between command-and-control regulation, market-based approaches, and information measures are common in debates about public policy instruments at the national level (Vedung 1998). These categories can also serve as a starting point for thinking about means of interplay management. For example, Oberthür (2009, 377–378) differentiates between regulatory interplay management and enabling interplay management (learning and capacity building), and Stokke in this volume makes a distinction between

cognitive, normative, and utilitarian interplay management (see also Stokke 2001b).

Relevant actors may advance interplay management at various levels of coordination among those involved (Oberthür 2009, 375–377). At the first and highest level, interplay management could rely on *overarching institutional frameworks*, which requires decision making beyond the interacting institutions. In the absence of a hierarchical political authority (“world government”) at the international level, institutions that span sectoral governance systems may specialize in one particular policy field, as UNEP does. Such overarching institutions may also be more comprehensive and cut across policy fields, as evident in the UN itself and in the general rules of international law, including those laid out in the 1969 Vienna Convention on the Law of Treaties. Proposals for a World Environment Organization aim at establishing a new, specialized overarching institution intended, *inter alia*, as a means for interplay management (Biermann and Bauer 2005).

At the second level, *joint interplay management* of the institutions concerned involves targeted efforts to coordinate the activities of interacting institutions, possibly even to create joint rules governing the interaction. Coordination requires a communication process across the interacting institutions, for example in the form of an exchange of information between the relevant secretariats, representation at each other’s meetings, or the creation of special bodies at scientific, administrative, or political levels to take up issues of common concern. Joint management thus involves horizontal structures for coordination between the sectoral regimes that characterize international environmental governance. This level of interplay management has received considerable attention, as reflected in the chapters by van Asselt and Zelli in this volume (see also Chambers 2008 and the discussion on clustering and political linkages above). Where joint management evolves into the establishment of a permanent interinstitutional body, the level of coordination approaches that of an overarching institutional framework.

At a third level, *unilateral management by individual institutions* involves collective decision making and action within one or more of the interacting institutions, without any coordination *between* them. For instance, the interaction between the WTO and the MEAs that employ environmental trade restrictions has been shaped largely through independent decision making within the respective institutions (Gehring in this volume). By not involving interinstitutional coordination of decision

making, unilateral management plays with the existing repertoire of international environmental governance.

At the fourth and lowest level of coordination, governments and other actors, such as civil society organizations and businesses, may engage in *autonomous management* efforts at national and regional levels. Individual actors constantly have to make decisions on the implementation of international rules and norms. Some of them are also involved in the decision-making processes in international institutions, also concerning collective interplay management. In this regard, individual actors face obvious choices that affect the overall interaction situation. For example, a state may implement environmental trade restrictions mandated by an MEA but in tension with WTO rules, with a view to provoking either tacit acceptance by other actors or a decision under the WTO dispute settlement procedure that would explicitly permit such restrictions under WTO law. Relevant activities of individual actors or groups of actors may either be in line with the objectives of the institutions involved or focus on realizing narrow self-interest. In our view, research on autonomous interplay management should differentiate clearly between these different orientations. It may even be useful to reserve the term “interplay management” for those activities that aim to pursue, maximize, or reconcile the collectively agreed-upon objectives of the interacting institutions. The contributions to this volume generally employ the concept of interplay management in this perspective.

These conceptual clarifications provide the basis and starting point for the investigation of interplay management in this volume. Interplay management is a topic that has generally been underresearched (see Gehring and Oberthür 2008, 221–222). Given the necessarily limited scope of our endeavor, we may not expect final answers, but the intention with this volume is to advance our understanding of interplay management by taking up some central questions, including the following: To what extent, with what means, and at what levels of coordination do states and other actors pursue interplay management? What are the achievements of interplay management so far? What factors have shaped its success or failure? And how might interplay management be improved in the future?

Institutional Complexes

Individual international institutions not only interact with each other, they also form parts of broader institutional complexes, and their

interaction generates interlocking governance structures (Raustiala and Victor 2004; Underdal and Young 2004, 374–375; Biermann et al. 2009) that frequently extend beyond the environmental realm (see Karlsson-Vinkhuyzen and Kok in this volume). Institutions may interact concurrently in several ways, and may influence and feed back to each other over time (Oberthür and Gehring 2006b, 29–30; see also Young 2002, 83–138). For instance, at least four international institutions—the WTO, the International Union for the Protection of New Varieties of Plants (UPOV), and the regimes based on the CBD and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR)—cogovern the provision and use of plant genetic resources and thereby influence each other’s development and effectiveness (Jungcort 2008 and in this volume; see also Raustiala and Victor 2004). Understanding each dyadic institutional relationship requires attention to the larger institutional complex as well.

Such complex interaction settings may produce new properties that are not inherent in the individual components but derive from their coexistence and coevolution, much as the emergent properties of a forest derive from the mutual influences among the trees and plants it comprises, influences that one cannot grasp by examining individual trees and plants (Gehring and Oberthür 2009). Exploring systematically the nature, evolution, and consequences of sets of institutions that cogovern particular issue areas, and the broader governance structures they form, therefore promises to advance a more integrated understanding of the dynamics and effectiveness of global governance (Raustiala and Victor 2004) and “global governance architectures” (Biermann et al. 2009). It requires moving from an analysis of the effects international institutions have on each other to an exploration of how these institutions cogovern their overlapping area of governance.

A basic question when exploring an institutional complex is to delimit the issue area in focus. In a first variant, issue areas may be determined functionally by examining certain sectors of governance. Thus, Jungcort in this volume investigates the institutional complex for the management of plant genetic resources, Gehring examines the relationship between the WTO and several MEAs, and Karlsson-Vinkhuyzen and Kok explore the nexus of climate, energy, and development. Stokke presents a spatial variant by starting out from one particular region, the Arctic, and examining the interplay of Arctic-specific institutions and those with a broader ambit. The various possibilities for defining the borders of an institutional complex call to mind the discussion on the most suitable

delimitation of the issue areas of individual international regimes (see Potter 1980; Haas 1975). In contrast to international regimes, institutional complexes are rarely “negotiated,” and policymakers do thus not regularly define the boundaries of institutional complexes by “political linkages” or “clustering.” As a practical guide for implementing a functional or spatial delimitation, the density and strength of institutional interplay may serve as a prime criterion. However, it may be difficult to reach a common understanding of the exact set of institutions among which interplay is dense and strong. It may thus be advisable to employ issue area delimitations that are widely shared by other researchers or policymakers as an additional criterion. Accordingly, all contributions to this volume investigate institutional complexes that combine relatively dense and strong interaction with high political and scholarly salience.

To further structure our thinking about institutional complexes, it may be useful to distinguish causal chains and clusters as two principal patterns of more complex interaction situations (Gehring and Oberthür 2009). In a causal chain, one case of interplay gives rise to a subsequent case that feeds back on the original source institution or influences a third institution. For example, the failure of parties to the global Basel Convention on hazardous wastes to adopt a ban of waste exports from members of the Organisation for Economic Co-operation and Development (OECD) to developing countries encouraged several developing countries to devise regional agreements barring imports of hazardous wastes from OECD countries. These agreements subsequently facilitated the adoption of a global export ban, which in turn affected the world trading system (Meinke 2002). Cases of interplay may also “cluster” around certain issues and institutions, forming more or less dense networks of institutional interaction. While causal chains refer to sequential interaction cases, clusters involve concurrent cases in which several institutions address an issue in complementary or competitive ways. Accordingly, we may find competitive clusters like the interaction of the WTO and MEAs (see Gehring in this volume), complementary interaction clusters like those affecting air pollution or fisheries management in the Arctic (see Stokke in this volume), or mixed clusters like the complex governing the provision and use of plant genetic resources (see Jungcirt in this volume).

Understanding institutional complexes and not only individual interactions is crucial for designing adequate interplay management strategies in global environmental governance. When sets of institutions interlock into larger complexes, sound analysis requires attention to broader

interaction effects beyond the immediate interplay in focus. An improved understanding of such broader effects should permit more effective interplay management strategies and is therefore highly relevant to the debate about reforming and developing global environmental governance. Proposals for such reform, including the creation of a World Environment Organization (Biermann and Bauer 2005), aim precisely at improving interinstitutional relationships and shaping the institutional structure of global environmental governance (see also Chambers and Green 2005; Najam, Papa, and Taiyab 2006). A better understanding of the dynamics and effects of institutional complexes contributes to this debate by allowing broader assessment of the effects of various forms of interplay management and proposed grand architectures of global environmental governance (see also Biermann et al. 2009). It is exactly from this perspective—one that sees institutional complexes as both a challenge and an opportunity for interplay management—that most of the contributions to this book approach the issue.

As one of the key areas of institutional interaction research in need of more attention, along with interplay management (Gehring and Oberthür 2008, 222), institutional complexes provide the second main theme of this volume. Starting from the conceptual foundation laid out above, we examine the structure, dynamics, emergent properties, and effects of institutional complexes, in particular by focusing on the following questions: What forces drive the emergence of institutional complexes? How are competing concerns and interests balanced within them? What factors determine any division of labor among the institutions involved or any prevalence of one institution over another? Finally, what factors account for stability and change within institutional complexes?

Organization of the Book

This book aims at advancing the research frontier on institutional interaction, and global environmental governance more broadly, by focusing on the two central themes highlighted above, *interplay management* and *institutional complexes*. Individual contributions address one or both of these issues by exploring various fields of international environmental governance. They may concentrate on specific institutional complexes (such as that concerning the interface of trade and the environment), the interplay management of particular interinstitutional relationships (such as the one between the regimes for the protection of the ozone layer and climate change), or relevant cross-cutting issues (such as the use of

savings clauses in treaty making or relations between regional and global institutions). Of note, several of the contributions include a time dimension by investigating changes over time.

In accordance with the state of research on institutional interplay, the book adopts an explorative and inductive approach. Taken as a whole, the cases and examples of interplay management and institutional complexes under study here constitute a broad sample that promises important insights across the field of global environmental governance. The contributions span a wide range of prominent areas of international environmental governance, including fisheries management, climate change, protection of the ozone layer, governance of the Arctic, relationships between trade and the environment, the conservation of biodiversity and the management of genetic resources, and sustainable development and energy. As editors, we are not aware of any particular selection bias, for instance in terms of successful or failed interplay management. While the varying substantive and theoretical foci required adaptations in the structure of individual chapters, the authors were asked to investigate and bring out how the analyses of their particular focus areas can illuminate the overall guiding questions regarding interplay management and institutional complexes. At the same time, we wish to acknowledge that the contributions do not necessarily constitute representative empirical samples of cases of institutional management and institutional complexes, even in the environmental and resource management domains, and that may of course limit the generalizability of our findings as they are synthesized in the final chapter of this volume.

The structure of this volume and the order of the individual contributions follow from the focus on interplay management and institutional complexes. The next chapter lays the foundation by providing a comprehensive overview of the status of research on institutional interaction. The subsequent three chapters focus on interplay management, shedding light on different types, levels, and consequences of such management. Thereafter the following six chapters turn increasingly toward institutional complexes. It would have been artificial, perhaps impossible, to establish a clear dividing line between the contributions focusing on interplay management and those dealing with institutional complexes, since interplay management is an important activity within institutional complexes. Consequently, the contributions on institutional complexes also speak to the theme of interplay management to varying degrees. Finally, in the concluding chapter we attempt to aggregate the findings of the volume with respect to its two main themes.

In chapter 2, Sebastian Oberthür and Thomas Gehring give an overview of major scholarly contributions to our understanding of institutional interaction. The authors first review the empirical focus of studies of horizontal interplay among international institutions and their major findings. With respect to conceptual advances, they highlight progress in the understanding of several causal mechanisms that underlie and drive institutional interplay. They further set out certain principal strategies that scholars use when exploring institutional interaction, and discuss how attention to this phenomenon changes the way we understand international institutions and global environmental governance, and the policy relevance of existing research findings. Their review of progress in research on institutional interaction leads them to identify interplay management and institutional complexes as two priority research areas.

In chapter 3, Harro van Asselt assesses various different means of interplay management with a view to enhancing synergy and mitigating conflict between regimes relevant to global climate governance. Since climate change interlinks in both cause and effect with many areas of human activity, van Asselt is addressing an inevitably complex and institutionally highly fragmented governance area. He identifies various ways of managing interplay between formalized multilateral regimes, distinguishing between “legal” and “political” approaches and examining their potential and limitations in reaping synergies and addressing conflicts between multilateral regimes relevant to climate change.

In chapter 4, Mark Axelrod argues that established techniques of interplay management in international law tend to be biased toward preserving the status quo and against institutional change. He examines the hypothesis that concern about potential conflict with international trade rules has the effect of “chilling” environmental treaties by discouraging or weakening ambitious proposals. Analyzing a new data set that codes deference to existing international law in more than two hundred multilateral agreements, he finds that a clear majority of multilateral agreements at least acknowledge the importance of some existing international law, with nearly 40 percent of them explicitly deferring to existing international law. Although MEAs are no more likely to defer to existing treaties than multilateral agreements in other issue areas, Axelrod sees evidence of a chilling effect in the finding that MEAs are significantly more likely than other treaties to take account of existing international agreements outside their own policy field.

In chapter 5, Sebastian Oberthür, Claire Dupont, and Yasuko Matsumoto examine the management of the interaction between the

international regimes for protection of the ozone layer and on climate change with respect to fluorinated greenhouse gases. In focus are projects supported under the climate change regime that may promote higher production and use of some ozone-depleting substances. Exploring the interplay management activities that have occurred largely separately within each regime, the authors report mixed results so far. Interplay management has not prevented the execution of a significant number of climate change projects with problematic interinstitutional effects, but eligibility constraints have limited the damage. Moreover, stricter hydrochlorofluorocarbon controls under the Montreal Protocol have brought additional benefits to both the ozone layer and the global climate, and ongoing initiatives have the potential to further strengthen synergy between both regimes.

Chapter 6 marks the transition to institutional complexes and their management. Olav Schram Stokke examines institutional complexes of regional and broader regimes relevant to Arctic resources and the environment, and argues that divisions of labor between the institutions of those complexes reflect interplay management efforts by those operating the institutions, who aim to exploit the specific capacities of their institutions. He identifies certain governance niches, or tasks that an institution may concentrate on amid existing efforts to solve the problem in hand: building knowledge, creating norms, enhancing capacity, and enforcing compliance. On the basis of general causal mechanisms that may connect institutions and environmental problem solving, Stokke pinpoints conditions for occupying those niches effectively, and explores for each governance niche distinctive features that equip an institution for meeting them. This framework for analyzing interplay management within an institutional complex is then applied to four cases of niche selection in Arctic environmental governance.

In chapter 7, Stefan Jungcurt focuses on interplay management in the institutional complex for international governance of conservation and use of plant genetic resources. Four international treaties regulate property rights to such resources. Two of them, the CBD and the ITPGR, deal mainly with the concerns of suppliers of genetic resources, whereas the WTO and UPOV primarily address resource user concerns, notably the protection of intellectual property regarding innovations. Jungcurt finds through “cross-dyadic” analysis of interinstitutional relationships that interactions between agreements with similar objectives tend to be synergistic, whereas those between supplier- and user-focused agreements are prone to disruption. Moreover, while management of the interplay

between the ITPGR and UPOV has been quite successful, such management has so far failed to mitigate disruptive interplay between the CBD and the WTO. Jungcurt explores various possible explanations for this, including the existence of a network of experts that evolved into an influential epistemic community in the success case.

In chapter 8, Fariborz Zelli relates the core themes of this book—institutional complexes and interplay management—to certain causal factors that loom large in the broader analysis of international regimes. He draws attention to causal factors and processes that can explain which regimes prevail in conflictive institutional complexes, and why. The author argues that dimensions of the power structure and the knowledge structure—two core determinants derived from general theories of international relations—may account for cross-case variation of regime prevalence. Zelli suggests that interplay management can significantly affect this dependent variable, and that employing core variables of social theories is helpful for identifying the conditions for successful interplay management.

In chapter 9, Thomas Gehring examines the dynamics of the institutional complex of trade and environment. He decomposes the difficult relationship between the world trade system and the numerous MEAs that include restrictions on trade, and examines the influence of the WTO on the normative development and effectiveness of environmental regimes, and vice versa. Gehring argues that, as a result of those influences, a division of labor has emerged in the trade–environment interface: the WTO defines the general standards that states must observe when considering environmental trade measures, while MEAs provide arenas for adopting and implementing such measures. By perpetuating a specific form of interaction among the functionally specialized component institutions, an interlocking governance structure of remarkable coherence is gradually evolving in the institutional complex of trade and environment.

Frank Alcock in chapter 10 explores the dynamics of vertical interplay in the institutional complex of international, national, and subnational property rights institutions in fisheries in the postwar era. The negotiation of UNCLOS redistributed the division of competences between coastal states and others by converting vast areas of oceanic space from a global commons to national exclusive economic zones. Whereas most chapters in this book deal with horizontal interplay, Alcock focuses on the vertical dimension. He shows how institutional changes at the international level have led to adaptations of national and subnational

fisheries arrangements, and that follow-on effects continue to unfold. Experimentation with innovative fisheries management arrangements, such as tradable quotas at national and local levels, may feed back to the international level through the adoption of new approaches to property rights delineation in regional fisheries management organizations.

Sylvia I. Karlsson-Vinkhuyzen and Marcel T. J. Kok in chapter 11 explore the integration of policy concerns in the nexus of the three broad policy domains of energy, development, and climate change and the associated institutional complex. In particular, they examine how such integration can be achieved through improved interplay management. The authors specify functional interdependencies among those domains and explore some options for interplay management, dyadically and within the nexus as a whole. Karlsson-Vinkhuyzen and Kok find that the prevailing unilateral interplay management in the nexus has so far proved inadequate, although the resultant institutional complex appears relatively stable. They argue that a forum with the necessary clout to advance a more integrated, joint management of the interfaces between the three domains and related interinstitutional coordination is lacking, not least because of variation in the levels of “legalization” and the strength of political status quo interests in the energy sector.

In chapter 12, we provide a synopsis of the major findings of the overall volume with respect to the two central themes, interplay management and institutional complexes. We highlight the pervasiveness and remarkable, if insufficient, effectiveness of decentralized interplay management in global environmental governance. The contributions to this volume furthermore demonstrate the emergence of divisions of labor among the elemental regimes of institutional complexes over time, which form meta-institutional interlocking structures. We also discuss the relative stability of such interlocking structures, which are reproduced by the mutual expectations they generate among relevant actors. Finally, we point out some areas for future research that promise particular returns on investment.

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Note

1. The terms “institutional interaction” and “institutional interplay” are used interchangeably throughout this chapter and throughout much of the book.

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