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Institutional Interlinkages

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Next to the myriad of existing intergovernmental institutions (Chapter 2), numerous new governance initiatives have emerged to tackle transboundary environmental challenges (Chapter 4). These initiatives include informal clubs of like-minded national governments such as the Climate and Clean Air Coalition, private certification schemes such as the Carbon Trust Standard and multi-stakeholder forums such as the Roundtable on Sustainable Palm Oil. This growing array of governance initiatives has considerably increased the institutional complexity of global environmental policymaking (Oberthür and Stokke 2011). Moreover, this proliferation of institutions causes more institutional interlinkages.

As institutions and their interlinkages have boomed over the past few years, so has the scholarship on institutional interlinkages. Of particular interest here is the expansion of interlinkages across different governance levels and scales. Earlier studies primarily (though not exclusively) focused on *horizontal* interlinkages between intergovernmental institutions operating at the same level of governance. More recently, however, scholars have devoted growing attention to *vertical* interlinkages across supranational, international, national and subnational layers of authority, as well as to *transnational* interlinkages between institutions set up by state and non-state actors. Against this backdrop, this chapter examines the extent to which present concepts and typologies of institutional interlinkages can capture the various interlinkages between different kinds of institutions in the evolving architecture of earth system governance.

The chapter proceeds as follows. First, we elaborate what we mean by institutional interlinkages and distinguish this term from related concepts covered in this book. We then review and synthesize the literature on institutional interlinkages and highlight key findings with relevance for earth system governance research. Finally, we identify gaps in our knowledge on institutional interlinkages and point to promising future research directions.

Conceptualization

Institutional interlinkages can be broadly understood as formal or informal connections between two institutions and their associated policy processes. Whereas the recent debate on the Anthropocene has drawn attention to the interconnectedness of different ecosystems and the inherent complexity of the earth system, governance has likewise become increasingly multifaceted and entangled (Biermann 2014; Pattberg and Zelli 2016; Hickmann et al. 2019). The responses to earth system changes are governed through explicit and implicit rule systems that operate at various levels and involve a broad range of actors with different motivations. Because of this governance complexity, an increasingly dense web of interlinked institutions addresses transboundary environmental problems. While earth system scientists have shed light on the biophysical interlinkages between environmental issues such as climate change, biodiversity loss or desertification, earth system governance scholars have focused on the interlinkages between the institutions that aim to tackle these challenges.

In their effort to study the connections and relations between institutions, scholars have proposed several terms, including institutional interaction, institutional interplay and institutional overlap (e.g., Zelli and van Asselt 2010; Brosig 2011; Oberthür and Gehring 2011; Oberthür and Stokke 2011; Van de Graaf and De Ville 2013; Betsill et al. 2015). In this chapter, we stick to the term institutional interlinkages, unless authors that we cite explicitly employ a different term. In line with the terminology used in this volume, we understand the dyadic interlinkages between two institutions as a key microscopic structural feature of the overall global governance landscape. In other words, institutional interlinkages are perceived here as the most basic building blocks or units of analysis in current scholarship on institutional architectures. The study of institutional interlinkages is thus a logical starting point for investigating the broader institutional setting of earth system governance.

Institutional interlinkages can be distinguished from related concepts addressed in this book, such as regime complexes (Chapter 7) and governance fragmentation (Chapter 8), both of which capture the relationships between institutions at a much higher analytical level. The concept of regime complexes stands at the meso level and emphasizes the interconnectedness and entanglement of three or more institutions within a larger governance architecture (Chapter 7; see also Orsini, Morin and Young 2013). The concept of governance fragmentation brings in a macro-level perspective, allowing for a comparison of different types and degrees of fragmentation across policy domains (Chapter 8; see also Zelli and van Asselt 2013). Depending on the nature of the dyadic relationships between individual components of the governance architecture in a given area, scholars can assess whether

the respective field is characterized by conflictive, cooperative or synergistic fragmentation (Biermann et al. 2009).

Other concepts covered in this book such as interplay management, policy integration and orchestration are also related to the concept of institutional interlinkages. Although the three concepts have varying connotations, they all involve and propose certain forms of direct or indirect steering in response to the plethora of institutions and their interlinkages. They can best be seen as frameworks to cope with increasing institutional complexity and entail, hence, a normative dimension. The identified options for policymakers range from setting hierarchical guidelines and creating coordinating or centralized institutions, to collective decision-making in the individual institutions or using intermediaries for achieving policy goals.

Over the past decades, the global environmental politics literature has shifted its focus from individual international regimes (Krasner 1983) to institutional interlinkages and complexes (see Chapter 1). In the mid-1990s, scholars concerned with international environmental policymaking started to highlight the importance of understanding such intricate relationships of international institutions (e.g., Herr and Chia 1995; Young 1996; Von Moltke 1997). Subsequently, several research projects provided important insights in this respect, including the Inter-Linkages Initiative of the United Nations University (Chambers 2001, 2008), the Institutional Interaction Project (Oberthür and Gehring 2006b, 2011; Gehring and Oberthür 2009), the Institutional Dimensions of Global Environmental Change Project (Young 2002; Young, King and Schroeder 2008) and the Global Governance Project (e.g., van Asselt, Gupta and Biermann 2005; Biermann et al. 2009; Zelli 2011).

In these research projects and other earlier studies on institutional interlinkages, the conceptual and empirical emphasis was mainly placed on *horizontal* interlinkages, that is, linkages between institutions at the same level of governance. There has been, for instance, a particularly strong focus on interlinkages between different international environmental regimes (Oberthür 2001; J. Kim 2004), between international environmental regimes and international economic institutions like the World Trade Organization (Young, King and Schroeder 2008; Zelli and van Asselt 2010) and between the international climate regime and other international organizations such as the International Civil Aviation Organization and the International Maritime Organization (Oberthür 2003, 2006). Together with a few influential conceptual works (e.g., Young 1996; Stokke 2001; Gehring and Oberthür 2009), these empirical studies laid the foundation for our current understanding of institutional interlinkages in global governance.

However, these studies shed light on only one part of the connections between institutions, given the myriad interlinkages across different levels and scales. To fill this gap, several scholars have focused on new types of institutional interlinkages

beyond the horizontal dimension. They investigate *vertical* interlinkages between institutions operating at different levels of governance. Several of these studies deal with and examine the multilevel governance system of the European Union or other regional regulatory schemes with distinct competencies in the realm of environmental politics (e.g., Selin and VanDeveer 2003; Oberthür and Gehring 2006b; Balsiger and VanDeveer 2012; Kluvánková-Oravská and Chobotová 2012; O'Neill 2013; Lindstad et al. 2015). Furthermore, scholars have started to analyze *transnational* interlinkages involving different kinds of public and private, as well as hybrid institutions (e.g., Bulkeley et al. 2014; Green 2014; Hale and Roger 2014; Betsill et al. 2015; Andonova 2017; Hickmann 2017b; Roger, Hale and Andonova 2017).

We now turn to synthesizing the literature on institutional interlinkages in more detail. Following an overview of existing typologies, we highlight key findings on the underlying reasons for interlinkages and their consequences, before discussing existing theoretical approaches and summarizing empirical studies of institutional interlinkages with a focus on scholarship from 2007 until today.

Research Findings

Typologies of Interlinkages

Scholars have proposed different typologies to categorize the various institutional interlinkages in global environmental policymaking, most of them prior to the publication of the 2009 Earth System Governance Science and Implementation Plan (Young 1996; Rosendal 2001; Stokke 2001; Young 2002; Oberthür and Gehring 2006a). Already in 2003, Henrik Selin and Stacy VanDeveer lamented that 'the literature on linkages remains littered with proposed taxonomies of linkages and little agreement regarding their utility for advancing understanding of the implications of such linkages' (2003: 14). In a seminal article, Young (1996: 2–7) distinguished four different types of interlinkages between the elements of international regimes: embedded, nested, clustered and overlapping institutions. The different types describe how the institutional units could be intentionally or unintentionally connected in terms of functional or political impacts.

Building upon Young's typology, scholars introduced other types of interlinkages, such as utilitarian, normative and ideational interplay (Stokke 2001: 10–11). Oberthür and Gehring (2006a, 2009) have proposed a typology consisting of four causal mechanisms operating at three levels of effectiveness of governance institutions. 'Cognitive interaction' and 'interaction through commitment' operate at the output level. Regarding these causal mechanisms, collective knowledge or specific commitments generated under one institution may shape decisions in another.

'Behavioural interaction' refers to inter-institutional influence at the outcome level. In this sense, behavioural changes of relevant actors induced in the domain of one institution at the implementation level affect the behaviour of relevant actors in the domain of another institution. Finally, 'impact-level interaction' occurs where effects on the ultimate target of governance of one institution (e.g., the climate system) influence the ultimate target of another governance institution (e.g., biodiversity or desertification).

The typologies for institutional interaction that we discussed so far were created for analyzing interlinkages between intergovernmental regimes or their elements. Over the past decade, however, several researchers have added typologies for interactions between transnational institutions that include non-state and subnational actors, and state-based institutions (e.g., Abbott and Snidal 2009; Abbott 2012; Green 2013). Eberlein and colleagues (2014), for instance, introduce a dynamic approach to examining transnational business-governance interactions. Their typology comprises six dimensions of interaction and six components of regulatory governance (Eberlein et al. 2014: 3). The dynamic aspect of this typology consists of mapping institutional interactions over time, that is, across the regulatory governance process similar to the policy cycle: starting from agenda setting and rule-formation towards implementation, enforcement, monitoring and evaluation. This typology has been used to study transnational environmental governance (e.g., Gulbrandsen 2014; Overdevest and Zeitlin 2014).

Underlying Reasons for Interlinkages

We can identify at least two drivers of the increase in the triggering of the causal mechanisms introduced by Gehring and Oberthür (2009) and hence the growth of institutional interlinkages.

First, the growth of the number of institutions in earth system governance increased institutional density and hence augmented the potential for overlaps and interlinkages. In this respect, it is noteworthy that many environmental institutions are dynamic in nature, that is, they feature decision-making systems – for example, in the form of conferences of the parties to multilateral environmental agreements – that continue to produce relevant norms and rules beyond their initial creation, which further increases the potential for institutional interlinkages. For instance, while the provisions of the United Nations Framework Convention on Climate Change that are related to biodiversity remain few and far between, subsequent rule development with regard to forest carbon sinks resulted in further interactions with the international biodiversity regime (van Asselt 2014).

Second, politics and more precisely actors' strategies and interests have been an important driver, also with respect to the institutional growth that we

mentioned. As research on actor strategies has shown, there can be important reasons for actors to establish new international institutions and to use and develop interlinkages strategically (Alter and Meunier 2009; Van de Graaf and De Ville 2013).

In this context, the evolving research on interplay management and orchestration (see Chapters 10 and 11) is also highly relevant for understanding the dynamics of institutional interlinkages. Eventually, institutional interlinkages are shaped by the decisions that actors collectively take within each of the interacting institutions as well as potentially in a coordinated or overarching way (Chapter 13). When these decisions are taken consciously in order to purposefully or even strategically alter the interlinkages, they qualify as interplay management or orchestration. Consequently, the decisions of (collective) actors that trigger and form interlinkages and those intended to shape them overlap and often become inseparable. This underscores the fact that interplay management and orchestration themselves create institutional interlinkages.

As with the typologies of institutional interlinkages discussed above, a set of causal mechanisms has been identified based on interlinkages between intergovernmental institutions. The question thus arises whether these mechanisms can also be applied to interlinkages that involve other types of institutions, such as international bureaucracies (Biermann and Siebenhüner 2009; Biermann and Koops 2017a) or transnational arrangements that have been highlighted in the polycentric framing of global governance (Jordan et al. 2018). Research findings on intergovernmental institutions and the relevant drivers (knowledge, norms or commitments, behaviour and impact) appear potentially relevant also for this broader field of institutional interlinkages. Yet the importance of the causal mechanisms may vary in different subfields, and the mechanisms themselves may need to be complemented by new cause-and-effect relationships.

Consequences of Interlinkages

Interlinkages can have various consequences. As a starting point, previous studies have suggested that institutional interlinkages can result in a conflict between the two institutions involved, or in synergy between them, or have neutral or indeterminate effects (Oberthür and Gehring 2006a: 46). Although the focus of many studies has been on potential conflicts, several cases of institutional interlinkages may, in fact, result in synergies. Gehring and Oberthür (2006: 318), for instance, found that more than 60 per cent of their sample of 163 cases of interactions between different kinds of institutions resulted in synergy. Furthermore, the nature of the relationship between two institutions may change over time and move, for example, from conflictive towards synergistic.

The concepts of conflict and synergy, however, remain under-explored. With reference to the literature on norm conflicts in international law, van Asselt (2014) proposes to distinguish between more narrowly defined 'norm conflicts' and broader 'policy conflicts'. Norm conflicts are incompatibilities between the norms (obligations, permissions and prohibitions) of two treaties, meaning that a party cannot comply with one norm without violating the other (Vranes 2009). Such conflicts pose particular problems from the perspective of international law; addressing them may require recourse to conflict resolution mechanisms that specify the priority of one norm over another (Chapter 13).

However, many situations in which environmental institutions are in tension with each other or with other non-environmental institutions may not be captured by such a definition. For instance, while no rule in the climate regime explicitly obliges or permits a party to implement projects that have adverse impacts on biodiversity, the economic incentives provided through the climate regime's market mechanisms could result in such impacts (van Asselt 2014). Resolving such policy conflicts does not necessarily require establishing a hierarchy between two norms but can still lead to detrimental outcomes. This may be the case because the goals of two different institutions are at odds with each other since different principles and concepts are adhered to, or because opposing economic incentives are provided.

Other scholars have also offered broader conceptualizations of 'conflict'. Pulkowski (2014) distinguishes various types of regime conflicts, namely conflicts of legal rules, conflicts of (policy) goals and conflicts resulting from (inter-) institutional conflict and power struggle. Zelli (2010) follows sociologists like Simmel (1992) and Dahrendorf (1968) in his understanding of institutional interlinkages as conflicts. Conflicts in this sense do not genuinely or solely take place among institutions, but rather reflect positional differences among actors who constitute these institutions. Thus, the essence of a positional difference – and thereby of the institutional interlinkage – relates to the overlapping or contested issues among two or more institutions.

The notion of 'synergy' has surprisingly drawn less attention than that of 'conflict'. Broadly speaking, it can refer to a situation in which the aggregate effects of two institutions are larger than the sum of effects produced on their own (Rosendal 2001), or in which the individual effects are at least complementary with each other. This, in turn, suggests that some measure of regime effectiveness is needed to determine whether we can speak of a synergy. This raises methodological challenges, especially when it comes to impact-level effectiveness.

The concepts of conflict and synergy arguably offer an overly narrow framing of the various types of consequences of institutional interlinkages, with the notions primarily linked to problem-solving effectiveness (Oberthür and Gehring 2006a).

Yet the consequences of institutional interlinkages may also be understood in other terms, for instance focusing on the efficiency of global policymaking, the distributional effects or the effects on legitimacy and accountability of institutions involved in the interaction. Moreover, conflict and synergy denote specific relationships at the expense of others, for instance competition, coordination and convergence (Eberlein et al. 2014). Another type of consequence concerns the division of labour between international institutions. Gehring and Faude (2013, 2014) suggest that inter-institutional competition leads to the specialization of institutions, with each institution fulfilling its own specific niche.

Theorizing Interlinkages

Following the pioneering sets of causal mechanisms developed by Stokke (2001), Oberthür and Gehring (2006b) and Rosendal (2001), several deeper explanatory approaches have been developed over the last decade. Often building upon classical regime theory and related institutionalist perspectives, these accounts have sought to address and fill the theoretical gap that several observers had identified in the research on institutional interlinkages (Chambers, Kim and ten Have 2008; Young 2008). Three trends seem noteworthy regarding the focus of this chapter.

First, there is a move away from classical power-based explanations towards interest-based, cognitivist, critical and discursive approaches. Early power-based explanations drew on tenets of hegemonic stability theory and instrumental multilateralism. They basically argued that hegemonic governments play a crucial role not only in the generation and design of a single international institution, but also in causing overlaps and rivalry among institutions. Such rivalry may be used to weaken or strengthen an incumbent institution or to open opportunities for 'forum shopping' (Raustiala and Victor 2004). Later studies expanded or modified this reasoning and showed that non-hegemonic actors also use their resources to shape or navigate institutional interlinkages (Alter and Meunier 2009; Helfer 2009; Orsini, Morin and Young 2013).

In the same vein, interest- and knowledge-based explanations of institutional interlinkages gained more prominence. These include, for instance, Van de Graaf's (2013) analysis of the establishment of the International Renewable Energy Agency. Drawing on neoliberal institutionalism, he posits that domestic preferences may lead to an institutional hedging strategy, whereby governments deliberately create overlapping institutions. Morse and Keohane (2014) termed this strategy 'competitive regime creation' in an era of 'contested multilateralism'. Furthermore, scholars began exploiting critical and discursive theories to understand institutional overlaps. Based on the notion of dominant liberal environmentalism (Bernstein 2002), Zelli and colleagues (2013) hold that a prevalence of global

norms that promote economic efficiency and environmental improvements through market-based mechanisms can partly explain the development of institutional interlinkages in the fields of biological diversity, biosafety, forestry, climate change and trade. Other scholars draw on different strands of discursive institutionalism by Arts and Buizer (2009), Schmidt (2008, 2017) or Hajer (1995) to understand how underlying discourses shape institutional interlinkages.

Second, another theoretical trend is a growing consideration of new 'spheres of authority' (Rosenau 1997: 41). Although the first wave of inter-organizational studies dates back to the 1970s (Gordenker and Sanders 1978; Hanf and Scharpf 1978), it was not until the early 2010s that a larger number of scholars scrutinized the role of transnational and private actors within institutional interlinkages in a theory-driven and systematic manner (e.g., Green 2014; Dingwerth and Green 2015; Hickmann 2016; Biermann and Koops 2017b). Their approaches acknowledge that interlinkages consist of many sites of political authority and that 'liquid authority' – meaning transnational, non-state, non-electoral authority – is replacing and/or supplementing traditional 'solid' sovereign authority (Krisch 2017). According to Hickmann (2017a), this development does not necessarily generate a shift of authority away from intergovernmental institutions and following Bäckstrand, Zelli and Schleifer (2018: 340), it 'implies reconfigurations of the functions of central institutions in a changing authoritative landscape'.

Third, theoretical accounts of institutional interlinkages increasingly adopt insights from disciplines other than political science and international relations. Abbott and colleagues (2016) refer to organizational ecology theories and their concepts of density, resources and niches to hypothesize with regard to the trajectories of institutional constellations in general and specific institutions therein. Likewise, social network analysis has become popular among international relations scholars, offering transparent and replicable measures to identify privileged actors within institutional overlaps (e.g., Kim 2013; Widerberg 2016; Hollway et al. 2017). While these and other complexity approaches might particularly lend themselves to analyzing the meso and macro levels, they can also offer novel explanations for the emergence and developments of dyadic institutional interlinkages.

Next to employing theories from different disciplines, a major unexplored territory in the theoretical literature is the formulation of more fundamental research questions. It is striking that the vast majority of approaches have sought to explain or understand a relatively concise set of aspects – first and foremost the emergence and shape of interlinkages, their synergistic or conflictive nature and the roles that specific institutions play. More far-reaching consequences of institutional interlinkages such as impacts on legitimacy, accountability, effectiveness and justice have largely remained under the radar of most theory-driven propositions.

Empirical Study of Interlinkages

Regarding the empirical study of institutional interlinkages, there has been a strong focus on global climate politics (e.g., Green 2008; Zelli 2011; van Asselt 2014; Betsill et al. 2015; Hickmann 2017a; Pattberg et al. 2018). This policy domain is of particular interest for studying institutional interlinkages because of the cross-cutting nature of climate change and the steadily growing number of institutions that address the problem of climate change directly or indirectly. Accordingly, several scholars concentrate their analyses on the connections between institutions dealing with climate change and use this field as a testing field or laboratory for investigating institutional interlinkages in depth in order to draw more general conclusions on current trends in global policymaking (e.g., Abbott, Green and Keohane 2016).

The focus of many scholars on global climate governance, however, does not mean that other areas of earth system governance have been neglected altogether. Several scholars have, for instance, examined the interlinkages between international environmental and economic institutions (e.g., Oberthür and Gehring 2006b; Jinnah 2010; Zelli and van Asselt 2010; Zelli, Gupta and van Asselt 2013; Jinnah 2014). In this area, scholars have focused on the relations between multilateral environmental agreements and the World Trade Organization. Moreover, scholars have put considerable efforts into analyzing the interlinkages across different biodiversity-related institutions (e.g., Caddell 2013; Oberthür and Pożarowska 2013). In addition, there is a growing body of literature about the interactions between environmental institutions and those operating in the field of human rights (e.g., Schapper and Lederer 2014) and security politics (e.g., De Grenade et al. 2016).

Two other trends in the empirical study of institutional interlinkages stand out. First, scholars have paid increasing attention to interactions within and beyond the field of global energy governance (e.g., Colgan, Keohane and Van de Graaf 2012; Van de Graaf 2013; Lesage and Van de Graaf 2016). This field is marked by a similarly large growth of institutions as the global climate policy domain. Moreover, the overlap between energy and climate governance is particularly strong when compared to other domains (Sanderink et al. 2017). Second, the adoption of the 2030 Agenda for Sustainable Development has given rise to numerous studies of complex connections and overlaps between institutions at different levels and scales that aim to achieve the 17 Sustainable Development Goals (e.g., Biermann, Kanie and Kim 2017; Lima et al. 2017; Tosun and Leininger 2017; see also Chapter 12).

In sum, while intergovernmental institutions remain important in earth system governance, numerous other institutions have lately been established that work at

different governmental levels (e.g., supranational organizations like the European Union or local environmental agencies) and across national boundaries (e.g., transnational city networks). These institutions may have some potential to fill the regulatory gap and help attain sustainable development in their jurisdictions and constituencies, but such effects have so far not been studied in enough detail. In this regard, the recent increase in vertical and transnational institutional interlinkages still needs to be fully digested and further empirical studies on these trends are warranted to better understand the broader earth system governance landscape.

Conclusions and Future Directions

This chapter has reviewed and synthesized the scholarship on institutional interlinkages and highlighted key findings with regard to earth system governance research. After providing a basic definition of the term institutional interlinkages, we looked back at the origins of this research strand. Then, we presented an overview of typologies, discussed the reasons for interlinkages as well as their consequences and recapitulated theoretical approaches and the current state of research on institutional interlinkages with a focus on literature that has been released since 2007. Based on the previous sections, we now stress remaining gaps in this research area, before we point to promising future research directions.

We see three gaps with regard to research on institutional interlinkages.

(1) First, concepts and typologies of institutional interlinkages sometimes stand next to each other without referring to and building on each other. While all these concepts and typologies place emphasis on different aspects of institutional interlinkages and are employed in different contexts, they have many commonalities and could benefit from mutual awareness and consideration. This would also enhance conceptual clarity, allowing for consistency across empirical analyses and possibly enable better communication to policymakers and practitioners. In this regard, the present edited volume lays some groundwork to increase precision of a sometimes-confusing research area with many similar concepts and competing typologies.

(2) Second, research communities concerned with institutional interlinkages remain disconnected. Although efforts have been made to bring together international law and international relations research on the issue (e.g., Young 2011; Pulkowski 2014; van Asselt 2014), the debates on the fragmentation of international law and norm conflicts are still largely overlooked in international relations scholarship. Conversely, international law scholars have by and large refrained from applying concepts, typologies and theories on institutional interlinkages when studying norm conflicts. Other examples of such disconnects concern research in public administration and public policy, as well as the emerging research strand on

inter-organizational relations (Biermann 2008; Biermann and Koops 2017a). A better collaboration between (sub-)disciplines would permit ideas to navigate across specialized themes and facilitate cross-fertilization and innovation (Morin and Orsini 2013: 562).

(3) Third, there are still blind spots regarding our empirical knowledge on institutional interlinkages. This is mainly due to the rise of the transnational and vertical dimension of institutional interlinkages. Some issue areas are well studied, whereas others are basically neglected. Examples of under-researched areas include the interactions between institutions that aim to regulate the use of chemicals or those that seek to reduce marine plastics. Regarding vertical interlinkages, only very few studies explore regional–global institutional interlinkages such as the interplay between regional water agreements and international sea conventions. Regarding transnational interlinkages, we lack studies that look beyond usual suspects and investigate interactions between less prominent institutions such as those aiming at promoting carbon pricing, avoiding land degradation or protecting endangered species.

Next to these gaps, we see three rewarding avenues for further research.

(1) First, there is much potential for studying the (inter-)connections between and beyond institutions operating in the fields of global energy and climate governance. While studies have extensively analyzed interlinkages between the international climate regime and trade as well as biodiversity institutions, the interplay between institutions operating in the climate-energy nexus merits further attention (Van de Graaf and Colgan 2016). Both the Paris Agreement from 2015 and the 2030 Agenda for Sustainable Development emphasize the close link between global energy systems and a changing climate and the need for an integrated approach. While the United Nations Framework Convention on Climate Change constitutes the center of global climate governance, global energy governance is more fragmented and lacks a core. It is hence important to compare across these policy domains and explore the evolving 'climate-energy nexus' (Sanderink et al. 2017).

(2) Second, such a 'nexus approach' can be fruitful to investigate interlinkages across different Sustainable Development Goals. In fact, the 2030 Agenda for Sustainable Development allows for the analysis of new types of institutional interlinkages in the context of specific goals and their 169 sub-targets (Weitz, Nilsson and Davis 2014; Boas, Biermann and Kanie 2016). With the adoption of such an unprecedented overarching policy framework for sustainable development, scholars can examine how new interlinkages between institutions aiming to foster sustainable development emerge and others get strengthened. In this regard, a particularly interesting topic is the interplay between international bureaucracies and transnational institutions that mobilize advocacy, create

demonstration effects, or otherwise pressure national governments for generating transformative shifts towards sustainable development (Hickmann and Elsässer 2018).

(3) Third, a crucial theoretical and practical question concerns the implications of a changing approach to earth system governance in times of a severe crisis of multilateralism. In general, there are two different scholarly perspectives. Some take a positive stance on the increasingly fragmented governance architecture and its effects pointing to an emerging polycentric governance system. Others remain more sceptical about the lack of coordination and coherence between and across institutions. While there might be some room for a middle ground between these two positions, we need more empirical studies that build on rigorous theory and methodology. These studies need to start from a sound and thorough understanding of the dyadic interlinkages between two institutions as a key 'microscopic' structural feature of the overall governance architecture.

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