10

Linkages

Understanding Their Role in Polycentric Governance

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10.1 Introduction

Global climate governance has developed from a classic international regime (based on the interests and decision-making of states) to a polycentric system (see Chapters 1 and 2), encompassing a wide range of non-state and subnational actors. Polycentric governance theory assumes that while governing initiatives are largely independent in establishing their own norms and rules via self-organisation, they are able to mutually adjust and collaborate with each other. Polycentric governance, in other words, highlights a non-hierarchic, layered landscape in which initiatives are linked rather than isolated. However, the exact nature of linkages has not been a major puzzle in polycentric governance theory to date. To close this gap, we explicitly discuss linkages between and among state, non-state and subnational actions in the polycentric climate governance system.

From a research perspective, 'linkages' is a broad and diverse concept. Linkages can be material, functional, biophysical or a 'fact of life' (van Asselt, Gupta and Biermann, 2005). For instance, climate change has an impact on biodiversity and poverty levels in countries lacking adaptive capacity. We focus, however, on *institutional linkages* that occur directly or indirectly, intentionally or unintentionally, among climate actions. Cities, for instance, collaborate and compete with other cities for resources; they are also dependent on the actions by the regions and countries in which they are located, the companies and industries driving their economies and their citizens (see Chapter 5).

From a policy perspective, coordinating and improving linkages between actors and institutions has started to gain traction. The 2015 Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) could be seen as marking a decisive shift towards more polycentric climate governance, increasingly trying to harness the potential benefits of linkages, while at the same

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time attempting to minimise the risk of conflict and overlap (see Chapter 2). The system of nationally determined contributions offers opportunities for new collaborations between public and private actors, and for strengthening existing linkages. The outcomes of the Paris climate summit gave unprecedented recognition to non-state actors (or, in UNFCCC jargon, 'non-party stakeholders') and cooperative initiatives in delivering climate action (see Chapter 4).

Against this background, we analyse linkages between state, non-state and subnational climate actions in the context of an emerging polycentric climate governance architecture. We begin by observing that the emerging polycentric climate system constitutes a networked structure, wherein individual actors interact with each other. To better assess the nature, quality and impacts of these interactions, we offer a discussion of previous conceptualisations of institutional linkages showing how climate actions by a myriad of cities, regions, companies and civil society organisations are connected. We then provide several illustrative examples for the main categories of linkages, focusing on interactions between transnational and international organisations. We then discuss the current and prospective approaches to ensure that climate actions interact synergistically with the intergovernmental UNFCCC regime and how synergistic interactions can be improved. Finally, we reflect on the core propositions of polycentric governance theory to assess its usefulness in analysing the current landscape of climate governance.

10.2 Polycentric Climate Governance as Networked Governance

Polycentric governance systems (including the global climate governance architecture) are characterised by multiple institutions organised in a non-hierarchical, top-down fashion. In the words of Ostrom (2010: 552), polycentric governance is characterised by

> multiple governing authorities at different scales rather than a mono-centric unit. Each unit ... exercises considerable independence to make norms and rules within a specific domain (such as a family, a firm, a local government, a network of local governments, a state or province, a region, a national government, or an international regime).

In this section, we review the evidence for the presence of a polycentric climate governance system by applying a network analysis to the plethora of regional, subnational, private and transnational climate actions currently making up the global climate governance architecture (see Biermann *et al*., 2009). Our argument is that climate actions are well connected and that, therefore, scholarly attention should focus on the linkages and interactions between governance initiatives.

The growth in the variety and number of actors and institutions in global climate governance is well documented. For instance, the Climate Initiatives

Portal, a platform providing information on transnational climate initiatives administered by the United Nations Environment Programme (UNEP), contains more than 220 initiatives engaging state and non-state actors across eight thematic issue areas (e.g. transport, energy efficiency and adaptation; see Widerberg and Stripple, 2016). Michonski and Levi (2010: 1) identify more than 16 international organisations in the United Nations (UN) system that are part of the 'broader complex of multilateral institutions whose rules, decisions, and activities can be expected to have important consequences for international efforts to confront climate change'. Similarly, Weischer, Morgan and Patel (2012: 177) study 17 'climate clubs' that 'includes any grouping that comprises more than two and less than the full multilateral set of countries party to the UNFCCC and that has not reached the degree of institutionalization of an international organization' (see also Chapter 19). From a polycentric perspective, it may be tempting to see this emerging system of governance units as consisting of relatively independent centres of authority. However, the degree of polycentricity of the system can be determined only by establishing how interdependent each governance unit is vis-à-vis other units.

Climate governance institutions are not necessarily independent governing centres. Keohane and Victor (2011) even argue that there may be tight coupling or regional hierarchies and clusters between some institutions. Green (2013) shows this empirically by mapping how 30 different private transnational carbon accounting standards recognise other standards, such as those used by the Kyoto Protocol's Clean Development Mechanism (CDM) or the European Union emissions trading system. Her analysis suggests that there is policy convergence in that public rules provide an 'anchor' for private rules to operate (Green, 2013). Hence, while the polycentric system of global climate governance appears to be increasingly populated by a myriad of new institutions and rule systems, Green shows how self-organisation around a limited set of common rules makes the system less fragmented than it seems at first glance. It is thus questionable whether in a counterfactual situation, without the Kyoto Protocol, there would have been a comparable surge in private carbon accounting schemes. This contradicts some of the core thinking in polycentric theory, namely that systems do not necessarily require a central coordinating force or agent to create order (Dorsch and Flachsland, 2017). It also begs another question: when can a system be considered polycentric, i.e. consisting of multiple centres of authority that are to some degree independent (taking into account that polycentricity is not, as noted in Chapter 1, a binary variable but should be understood as a continuum)? To answer this question, one has to understand the number and intensity of linkages between different governance units.

Green's analysis includes three key conceptual and analytical aspects that enable her to study institutional linkages in a manner that resonates with polycentric theory. First, she conceptualises the system as a network consisting of nodes and links, following a growing trend among international relations scholars that characterise global governance in terms of networks (e.g. Hafner-Burton, Kahler and Montgomery, 2009; Kahler, 2015). This perspective understands the world as consisting 'not of states but of networks', and problems (and their solutions) arise because of too many or too few connections (Slaughter, 2017). Second, Green analyses linkages at the system level rather than at the dyadic level. Whereas traditional perspectives on institutional interplay and interactions (see later in this chapter) studied the linkages between a 'source' and a 'target' institution, Green's network perspective allows her to look at linkages between three or more institutions. Third, she uses network analysis to approach her subject. Network analysis has become increasingly popular over the past 15 years through scientific breakthroughs in disciplines such as mathematics, physics and biology (Barabási, 2015). Network science suggests that widely different networks tend to share common properties. For instance, cascading events – when an initial change in one node has knock-on effects on neighbourhood nodes leading to large-scale effects – have been observed on the Internet, the financial system and human bodies (Barabási, 2015). Moreover, network analysis also allows for identifying central nodes in the network, revealing where power and authority may be situated.

Moving towards an empirical mapping of linkages in global climate governance requires the analyst to choose what type of linkages to focus on. One attempt has been presented by Widerberg (2016), who focuses on the 'interaction structure' created by joint membership of actors in institutional arrangements. This approach suggests that if two institutions share a member (i.e. an organisation), then knowledge, ideas, information and norms can more easily travel between the institutions. Members become 'bridges' between different institutions, acting as mediators or gatekeepers for linkages. Members also function as forces of convergence as they try to streamline rule systems for reasons of efficiency. For example, if a city is part of two different urban climate governance networks, it has an incentive to ensure that mitigation goals and monitoring and reporting standards are the same or at least do not contradict each other. Hence, mapping how institutions are linked by membership provides valuable insights into the processes of convergence and divergence in the polycentric climate governance system.

Using data collected by Widerberg, Pattberg and Kristensen (2016), we create a network diagram of 77 international and transnational, public, private and hybrid institutions. Each node in the network represents a climate action, and each link represents a shared participant (i.e. organisational member). For instance, if Sweden participates in both the UNFCCC and the Renewable Energy and

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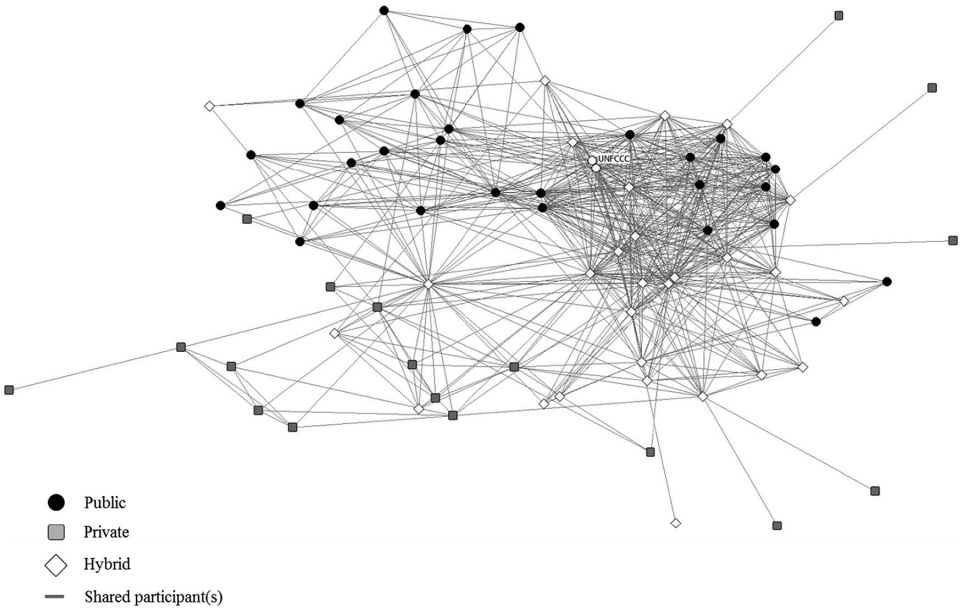

Figure 10.1 Network visualisation of 77 institutions in global climate governance. Source: Widerberg (2016).

Energy Efficiency Partnership, a link is created between the two institutions. Figure 10.1 shows the resulting figure, with the UNFCCC clearly marked.

Visualising the global climate governance landscape as a network shows how well connected the institutions are in terms of shared membership. It also shows how the UNFCCC is one of many institutions but that it remains centrally positioned vis-à-vis the others. If one assumes that shared membership increases the likelihood of interaction between institutions in terms of the exchange and flow of knowledge, ideas, information and norms, then it provides a starting point for delving deeper into what exactly travels through the network and in what direction. The next section discusses various approaches to conceptualise the linkages of institutions in the polycentric climate governance architecture.

10.3 Institutional Linkages in Polycentric Climate Governance

10.3.1 Conceptualising Institutional Linkages

Linkages between individual units of governance are key to polycentric governance, particularly as they may result in mutual adjustments improving the overall coherence of the governance landscape. Institutional linkages have been studied extensively in the environmental politics literature and, as a result, we can draw on

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a variety of typologies (e.g. Young, 1996; Stokke, 2001; Oberthür and Gehring, 2006) to help us better understand them.

Among the first to provide a typology of institutional linkages was Young (1996), who distinguished among embedded, nested, clustered and overlapping institutions. The first category refers to international institutions that are embedded in overarching institutional arrangements. As most are international treaties, they are embedded in the general principles of international law and society, such as the principle of sovereignty (Young, 1996). The second category involves institutions that are nested in, and restricted by, a broader institutional framework. This is clearly demonstrated by the high number of protocols folded into environmental framework conventions. The third refers to situations in which several international agreements are deliberately combined into a new agreement, even though there is no functional need. The fourth category includes institutions that serve different purposes but impact each other in the process, without reference to each other (Young, 1996: 6).

Young emphasised that this typology is not exhaustive, and that the categorisation was intended as 'an initial step towards understanding the nature and significance of institutional linkages in international society' (Young, 1996: 2). Subsequently, Stokke (2001) provided a refined classification, distinguishing between utilitarian, normative and ideational interactions. Utilitarian interactions refer to situations in which institutions affect the costs and benefits of the behavioural options addressed by the other institution. Normative interactions occur when one institution confirms or rejects the norms of the other institution, which affects the normative effectiveness of that institution. The third category draws attention to learning processes between the interacting institutions.

A third categorisation was introduced by Oberthür and Gehring (2006), who distinguished among cognitive interactions, interactions through commitment, behavioural interactions and impact-level interactions. They focused more strongly on the causal mechanism underlying these interactions, or, in other words, on the processes or pathways through which the interactions are shaped. Cognitive interactions imply that one institution influences the development of another institution through knowledge and information. An interaction through commitment refers to overlapping or conflicting normative commitments. Behavioural interactions occur when the behavioural change triggered by one institution affects the performance of the other institution. Finally, impact-level interactions refer to situations in which the side effects of the activities by one institution affect the implementation of the targets of the other institution.

Interestingly, the aforementioned efforts, and in particular Young's (1996), mostly focus on linkages between international treaties and regimes. However, it is widely acknowledged that the landscape of climate governance is no longer

solely governed by state authority, top-down regulations and international treaties and organisations. Consequently, Young's typology cannot easily be applied to assess linkages in a more diverse and multilayered landscape, including bottom-up initiatives, voluntary private arrangements and public-private partnerships. The typologies by Stokke (2001) and Oberthür and Gehring (2006) are more flexible in this regard, since these focus on the causal mechanism shaping the linkages. In a different attempt to close this knowledge gap, Eberlein *et al.* (2013) introduce a framework to analyse 'transnational business governance interactions'. Their framework enables the analyst to study drivers, forms, causal mechanisms and pathways, and effects of linkages between heterogeneous actors that have varying capacities and are located within diverse institutional contexts (Eberlein *et al.*, 2013: 2). However, as the scholars emphasise themselves, this is merely a modest initial attempt to assess the effects of linkages on 'regulatory capacity and performance' (Eberlein *et al.*, 2013: 14), and it is not yet sufficient to study the effects on the performance of a polycentric governance landscape as a whole.

Comparing the typologies by Stokke (2001) and Oberthür and Gehring (2006) reveals that some types display similar characteristics in terms of the causal mechanisms underlying the linkages. Both the ideational interaction and the cognitive interactions are based on learning processes as causal mechanisms. In addition, the normative interaction as well as the interaction through commitment is based on the diffusion of norms and principles. Finally, the utilitarian and impact-level interactions overlap in the way that they are both focused on the interacting impacts of the institutions' activities. Therefore, these three types of linkages can be considered similar, and are here summarised under the most recent terminology: cognitive linkage, linkage through commitment and impact-level linkage (Oberthür and Gehring, 2006).

In addition, the categorisations introduced earlier are not exhaustive. One could think of additional mechanisms through which linkages can be shaped – for example, financial flows, shared resources, political ideas and discourses, and so on. Finally, the aforementioned studies focus on dyadic linkages between units of governance, while to analyse polycentricity, it is necessary to go beyond these dyadic linkages and to analyse polyadic linkages among different units of governance. Only this would serve the ultimate goal of assessing the impacts on the performance of a governance landscape in addressing the issue or attaining the societal goal.

Clearly, to assess linkages in a polycentric governance landscape, it is important to reconsider and refine existing typologies of linkages. Table 10.1 serves as a starting point by summarising, combining and slightly adjusting the applicable types of linkages to make them fit the polycentric governance debate. In combination with Eberlein *et al.* (2013), this is a first step towards finding

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Table 10.1 *Summary of applicable types of linkages*

Type of institutional linkage	Description	Causal mechanism	Reference
Cognitive linkage	Governance units are linked through the exchange of knowledge, information and ideas	Learning process	Stokke (2001); Oberthür and Gehring (2006)
Linkage through commitment	The (voluntary) commitments of a governance unit influence or enter into those of another governance unit	Norms, commitments, principles, objectives or goals	Stokke (2001); Oberthür and Gehring (2006)
Behavioural linkage	The behavioural change triggered by a governance unit influences the performance of another governance unit	Behavioural change	Oberthür and Gehring (2006)
Impact-level linkage	The ultimate targets of governance units intersect	Impacts of activities	Stokke (2001); Oberthür and Gehring (2006)

linkages in a governance landscape that is characterised by the diversity of actors and governance processes.

10.3.2 Examples of Linkages between State and Non-state Climate Action

Empirical work on institutional linkages has demonstrated the influence governance institutions can have on the development and performance of others. Most research has focused on multilateral institutions, for instance the linkages between the UN climate regime and the World Trade Organization (e.g. Brewer, 2003; Charnovitz, 2003; van Asselt, 2014). We provide illustrations of each type of linkage identified earlier and include linkages between public and private institutions. Our empirical focus is on climate actions in the renewable energy field.

First, *cognitive linkages* appear to occur frequently and can be identified relatively easily. The Renewable Energy Policy Network for the 21st Century (REN21), for example, connects a wide range of key actors in climate governance to facilitate knowledge exchange. Thereby, this network facilitates cognitive linkages between international organisations, such as the International Renewable Energy Agency (IRENA) and the International Energy Agency (IEA), non-

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governmental organisations such as the World Council on Renewable Energy, and multi-stakeholder partnerships such as the Renewable Energy and Energy Efficiency Partnership. The cognitive linkages between these different types of governance units are easily identified; however, the more challenging analytical step is to assess if the linkages actually affect the development, performance and preferences of these governance units. This would require a more extensive review of official documents and interviews. Additionally, a cognitive linkage can also be intentional when a request for assistance is involved. This is the case between the IEA and the UNFCCC. In 2012, the IEA and the UNFCCC signed a Memorandum of Understanding, which committed both institutions to a closer and active exchange of information (Heubaum and Biermann, 2015). Upon request, the IEA now provides its statistics and knowledge on energy systems to inform the UNFCCC secretariat to support the parties to the UNFCCC.

Second, *linkages through commitment* can be observed, for example, between the UNFCCC and the Sustainable Energy for All (SE4All) initiative. Before elaborating on this linkage, is it important to note that an 'interaction through commitment' is interpreted flexibly. Since hard law and rule-making is less prominent in polycentric governance, while voluntary commitments increasingly occur, here a 'commitment' does not solely refer to imposed rules, but also to (voluntarily set) principles, norms, objectives or goals, etc. SE4All was set up to address the dual challenge of reducing carbon intensity of energy use and expanding energy access globally. More specifically, SE4All pursues efforts to hold the increase of the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the increase to 1.5°C (SE4All, n.d.). Hereby, the objective of the Paris Agreement framed the goal of SE4All, influencing the development and performance of the initiative. Given the global recognition of the 2/1.5°C objectives, it is plausible that they will likewise frame the goals and commitments of other types of initiatives.

A potential *behavioural linkage* occurs between the Friends of Fossil Fuel Subsidy Reform and RE100. The Friends of Fossil Fuel Subsidy Reform is an informal group of countries, set up in 2010, which aims to build political consensus on the importance of phasing out harmful fossil fuel subsidies. According to the Friends of Fossil Fuel Subsidy Reform, these subsidies encourage wasteful consumption of energy, which in turn disadvantages the use of renewable energy. Consequently, to the extent the Friends of Fossil Fuel Subsidy Reform is successful in phasing out these subsidies, it could trigger a behavioural change towards the use of renewables. Therefore, it potentially increases the effectiveness of RE100, which is an initiative of businesses collaborating to massively increase the demand and supply of renewable energy (RE100, n.d.). Since the impact of the Friends of Fossil Fuel Subsidy Reform initiative is still unknown, this is a potential linkage of

which both the occurrence and the effect remain uncertain. Still, it could be worthy of consideration for future research.

Finally, *impact-level linkages* imply that the side effects of the activities by the source institution affect the performance of the target institution unintentionally. An interesting example of this linkage can be found in the Kyoto Protocol, more specifically the set-up of CDM projects, and the Global Network on Energy for Sustainable Development. For developed countries, the CDM projects are a way to generate credits to achieve compliance to their emission limitation and reduction targets under the Protocol. The prerequisite was that the projects were to be set up in developing countries to support their sustainable development. Therefore, the side effects of these CDM projects, for example improving energy access, affect the effectiveness of the Global Network on Energy for Sustainable Development, whose main objective is to support energy access and sustainable development in developing countries. Beyond anecdotal evidence, however, identifying impact-level linkages has proven difficult. As Oberthür and Gehring (2006) argue, this type of linkage is complex to identify as it does not involve a social interaction, but rather a biophysical or scientific link between the targets of the governance units. However, we prefer not to assume it is impossible and recognise that it requires intensive collaboration between different disciplines to assess such a linkage.

To conclude, the typologies by Stokke (2001) and Oberthür and Gehring (2006) can be applied to study linkages in a polycentric governance landscape. However, doing so properly requires time-intensive empirical research, including extensive documentary reviews and interviews, to assess the causal pathways and their effects. In addition, covering all linkages in the polycentric landscape of climate governance does not seem feasible since the number of governance units being linked can be in their hundreds. A more realistic research strategy might instead focus on critical nodes or sub-areas of the broader polycentric climate governance system (e.g. renewable energy in this brief discussion).

10.4 Strengthening Linkages in Polycentric Climate Governance

Mapping and identifying linkages in the climate governance network shows the potential that exists for ideas and innovations to diffuse through the system (see Chapter 9). For polycentric climate governance to be conducive to a low-carbon future, however, synergies need to be strengthened while conflicts need to be avoided or minimised. This section consequently discusses coordination efforts to enhance synergistic linkages between different institutions and organisations by the UNFCCC, national and regional initiatives and transnational initiatives themselves.

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10.4.1 A Framework for Coordinating the UNFCCC and Non-state Climate Action

Within a polycentric climate governance environment, traditional political actors, such as governments and international organisations, are likely to remain important. Polycentricity implies that such actors are part of a complex system that includes non-state and subnational actors. Traditional actors can create synergies and strategic linkages between different types of actors, and between the international regime and the non-state realms, to achieve climate goals. International organisations often enjoy a high degree of legitimacy through their broad membership of national governments. However, in their traditional role as facilitator of international negotiations, they have also become associated with slow-moving and often deadlocked regimes. Closer engagement of non-state and subnational actors could provide an attractive complement to these traditional roles. Various international organisations have tried to encourage non-state actors to register their actions, for instance at the 2002 World Summit for Sustainable Development. These efforts have often been unsuccessful (Pattberg *et al*., 2012). Much emphasis was put on the launch of non-state actions; however, the lack of follow-up processes prevented systematic tracking of performance of individual initiatives and an assessment of aggregate contributions towards global targets and goals. Moreover, international organisations often lacked the mandate and the means to support new or struggling initiatives.

In the context of the UNFCCC, considerable progress has been made in recent years towards more orchestration by key governments (in particular presidencies of annual Conference of the Parties [COP]: Peru, France and Morocco), as well as the UNFCCC secretariat and the Executive Office of the UN Secretary-General (see also Chapter 11). These key political actors have strategically engaged with the broader environment of non-state and subnational climate actions. The engagement of non-state and subnational actors has been central to the so-called Workstream 2 of the UNFCCC's Ad Hoc Working Group on the Durban Platform for Enhanced Action, which was the body responsible for negotiating the Paris Agreement.

This Workstream was particularly concerned with strengthening climate action and ambition before 2020 because non-state and subnational actors could make mitigation efforts in addition to what states do. The UNFCCC secretariat also presented 'international cooperative initiatives', including non-state and subnational actions that 'could provide added value to Parties' actions and bring sizeable emission reductions' (UNFCCC, 2013). Moreover, as part of the Workstream, technical expert meetings were organised to feature international cooperative initiatives as solutions for governments seeking to enhance their mitigation

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ambition. The negotiations towards the Paris Agreement also provided new impetus for key governments and the wider UN system to engage non-state and subnational actors. A milestone in this regard was the convening of the 2014 UN Climate Summit by UN Secretary-General Ban Ki-moon, which was dedicated to commitments to actions by business, investor, local and regional leaders.

Subsequent presidencies of the COP to the UNFCCC, and the UNFCCC secretariat, have continued efforts to 'galvanize and catalyse climate action [to] reduce emissions, strengthen climate resilience, and mobilise political will for a meaningful legal agreement in 2015' (UN, 2014). For instance, the Peruvian government, together with the then-incoming French COP presidency, the Office of UN Secretary-General and the UNFCCC secretariat, launched the 'Lima-Paris Action Agenda' to incentivise more actions ahead of the COP in Paris. After Paris, these efforts were sustained – albeit under a new name, the Marrakech Partnership.

Arguably, consecutive efforts have amounted to a coordination framework for actions between the UNFCCC and non-state and subnational initiatives, a 'global climate action agenda' (Chan and Pauw, 2014; Chan *et al.*, 2015b; Widerberg and Pattberg, 2015). This framework has partly become formalised through the Paris outcome, as governments agreed to appoint 'high-level climate action champions' to mobilise and showcase climate actions by non-state and subnational actors at high-level climate action events. The decision coming out of Paris also helped to strengthen links between non-state actors and the UNFCCC. Specifically, governments decided to extend technical expert meetings to also cover adaptation; to gather insights from the technical expert meetings on an annual basis; to emphasise the Non-State Actor Zone for Climate Action (NAZCA) as the main platform for registering non-state climate actions; to encourage the registration of more actions; and to install two 'high-level champions'. The champions take some of the burden away from COP presidencies and the UNFCCC secretariat in the mobilisation of non-state and subnational climate actions and the organisation of an annual high-level event for climate action, while ensuring the continuity of mobilisation efforts, at least until 2020.

However, increased coordination in the context of the UNFCCC has not necessarily created synergistic linkages between intergovernmental regimes and non-state initiatives that ensure effective achievement of climate goals. In terms of linkages, the existing framework falls short of exploiting opportunities to ensure that non-state actors deliver effectively and in a balanced manner. For instance, the overemphasis on the showcasing of non-state and subnational climate commitments (e.g. through NAZCA) ignores the fact that many commitments may not be met, and that some commitments may be disingenuous (consider, e.g., a multinational corporation that seeks to present business as usual as clean and

green). Moreover, current studies show that mobilised initiatives are not performing equally as well across sectors and countries (Chan *et al.*, 2015a); resilience and adaptation initiatives are underperforming compared to mitigation initiatives, and initiatives perform worst in least developed countries. A framework that primarily seeks to improve visibility and recognise voluntary commitments puts a spotlight on imbalances that arise in a self-organising polycentric governance environment, rather than remedying them. For instance, by strengthening the role of private actors – often based in developed countries – such a framework could exacerbate disparities between mitigation and development needs, and between developing and developed countries. Proponents of a 'comprehensive framework for climate actions' have therefore argued that coordination should also provide material and ideational support and encourage accountability to ensure that non-state initiatives are in line with objectives under international agreements, in particularly under the Paris Agreement and the 2030 Agenda for Sustainable Development (Chan and Pauw, 2014; Hale and Roger, 2014; Chan *et al.*, 2015b; Widerberg and Pattberg, 2015).

While the Paris outcome constitutes the most comprehensive framework to link the UNFCCC with other actors in the more polycentric landscape, it still could be improved. For instance, the emphasis of the ongoing climate action agenda is still on mobilising action, while much less attention is given to evaluating the performance of initiatives, let alone whether their aggregate impact is consistent with long-term objectives (see Chapter 12). Without such evaluation and assessment of non-state initiatives, key players in the UNFCCC process cannot design evidence-based interventions to maximise non-state mitigation contributions, or to provide targeted support in areas where non-state actors underperform. Part of the difficulty in creating beneficial linkages lies in the fact that coordinating actors, for instance the UNFCCC secretariat, often lack the political mandate and sufficient capacity themselves to ensure transparency and effectiveness of non-state initiatives. Although the UNFCCC secretariat has some capacity to mobilise initiatives and showcase them in international forums – especially in connection to the international conferences and intergovernmental negotiations they traditionally facilitate – its capacity to perform assessments of individual initiatives is very limited, let alone to evaluate whether a larger realm of climate actions and commitment is bringing long-term goals within reach.

In a polycentric governance system, however, there is no reason why the function of coordination should be concentrated in the hands of one or a few actors. Instead, the coordination of actions itself could be distributed in a network of, for instance, research groups and international organisations (Chan *et al.*, 2015a). For example, UN organisations could (continue to) mobilise actions and administer an online platform recording initiatives; their achievements could be hosted by

another public institution; individual assessments could be performed by research organisations; and the UNFCCC secretariat could compile individual assessments into periodic progress reports. Such a distributed coordination framework could leverage distributed capacities and resources in a polycentric governance system, and – contrary to one-off mobilisation campaigns – provide material and ideational support to new or underperforming actions, and track progress and aggregate impacts towards low-carbon and climate-resilient development.

10.4.2 National and Regional Platforms

Beyond the international processes aiming to strengthen linkages in the polycentric climate governance system, local and national initiatives to coordinate various climate actions are starting to emerge (see also Hale and Roger, 2014). For example, in Sweden, the government has appointed a national coordinator to develop and maintain a platform for dialogue and cooperation between the government and non-state actors such as companies, cities, regions, civil society organisations and academia, as well as among the non-state actors themselves. It currently engages about 170 different organisations that have signed a declaration stating they will show leadership and promise to contribute to further reductions of greenhouse gas emissions.

The platform is a continuation of the already existing initiative *Fossilfritt Sverige* that was launched by the government in the run up to COP21 in Paris. Besides functioning as a liaison between the government and non-state and sub-national actors, the platform and the coordinator are also mandated to engage more organisations in the platform and increase the visibility of their actions. *Fossilfritt Sverige* is also directly linked to the UNFCCC process as it encourages its members to report to the NAZCA platform. The platform is also a way to link the low-carbon agenda to broader industrial policy processes such as the national export strategy, smart industry and reindustrialisation strategy, the agenda for a bio-based economy, the national innovation council and several others (Kommittédirektiv Initiativet Fossilfritt Sverige, 2016: 66). *Fossilfritt Sverige* emerged out of an understanding by the Swedish government and its partners that coordination was needed to enhance linkages between initiatives and the government. By coordinating actions, the hope of the government is to create synergies and learning effects between organisations across sectors through dialogue, cooperation and learning.

10.4.3 Transnational and Private Initiatives

Linkages in the polycentric governance system are increasingly and deliberately created by transnational and private initiatives. The global climate action agenda mentioned earlier also stimulates linking between transnational initiatives by

categorising actions under different action areas and by appointing lead organisations to organise events aimed at actions within a certain sector. For instance, in the Paris Process on Mobility and Climate, 15 transnational initiatives collaborate to hold stakeholder meetings, to engage with high-level processes (including the global climate action agenda) and to produce joint progress reports (Paris Process on Mobility and Climate, n.d.).

Non-state and transnational networks can also contribute in a more direct manner to the international climate process. For instance, non-state actors could contribute information to the assessment and review of national climate pledges made under the UNFCCC (van Asselt, 2016). Moreover, non-state expert networks have directly supported the global climate action agenda. Galvanizing the Groundswell of Climate Actions, a network convened by experts from a variety of civil society and research organisations, and defining itself as 'a series of open dialogues that aims to bring the groundswell of climate actions from cities, regions, companies, and other groups to a higher level of scale and ambition' (Galvanizing the Groundswell of Climate Actions, n.d.) has suggested options for the global climate action agenda and closely advised high-level climate action champions, for example on priority areas to address at high-level action events. The network produced an assessment of 70 initiatives launched under the Lima-Paris Action Agenda and has continued to identify opportunities to strengthen linkages between the international climate regime and non-state climate actions, for instance by engaging funders through a memorandum on how they can accelerate global climate action until 2020 (Galvanizing the Groundswell of Climate Actions, n.d.).

These instances illustrate that the gradual development of a more comprehensive framework linking the transnational and international climate realms is not characterised by one-way traffic, with traditional actors in international politics – governments and international organisations – reaching out to non-state actors and their contributions. Rather, the global climate action agenda – and the building blocks of a more comprehensive framework – have been a co-production between state and non-state actors.

10.5 Conclusions

Global climate governance is no longer an exclusively intergovernmental process. It has become a more polycentric governance system that is open to a range of non-state, non-party, subnational and private actors. In this chapter, we have shown that the polycentric system of climate governance is not only constituted as relatively independent initiatives, but also that climate actions are interlinked and consequently form a networked structure. To better scrutinise the possible and actual linkages among institutions in the polycentric governance system, we have

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provided an overview of four types of linkages and corresponding illustrations from the climate field. We can make three concluding observations.

First, the dense interaction structure in the polycentric climate governance system enables an exchange of resources via shared membership. Organisations in the network can exchange knowledge, norms and information, thereby enabling mutual adjustment and experimentation – two central propositions within polycentric theory (see Chapter 1). Furthermore, the potential to exchange resources such as information through the network allows for linkages to form that can lead to behavioural interdependence, i.e. a situation of mutual adjustment. As a consequence of the dense structure and the linkages between governance units, the polycentric climate governance system might display characteristics of a complex system in which the whole is more than the sum of its parts.

Second, while the system is polycentric, it also demonstrates elements of integration. In particular, the strong and central position of the UNFCCC (which acts as a centre of gravity in the system) is well reflected in the network analysis as well as in the observed interaction through commitment where normative foundations of the UNFCCC are streamlined into non-state initiatives. In particular, the Paris Agreement and its 2/1.5°C goals serve as such an integrative device.

Third, based on our empirical illustrations from the renewable energy field, we see little evidence of conflictive linkages. While more systematic research on the overall quality of linkages in the polycentric climate governance system is needed, it is an encouraging sign that linkages are often synergistic. In part, this might be the result of attempts to strengthen linkages discussed in this chapter.

Finally, what is the value of polycentric governance? While it helpfully serves as a concept to describe the evolving landscape of climate governance, it also raises questions. In particular, no agreement can be found in the literature on what constitutes a minimum level of independence in terms of norm- and rule-setting abilities of individual initiatives in order to constitute a polycentric structure. In addition, no threshold values are defined for linkages. In this chapter, we have suggested that the degree of connectivity in the polycentric governance system is high, as is the number and types of linkages present in the climate governance system. Beyond serving as a broad and inclusive concept, the analytical value of polycentric governance seems to be limited in the case of networked climate governance. One way forward would be to more openly embrace the theoretical implication of understanding climate governance as a *system*. Beyond the metaphoric use, this would mean that researchers start to apply insights from complexity theory (which deals with the behaviour of

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complex systems). An intermediate step towards this goal could be to reflect more on the system-theoretical assumptions underlining polycentric governance theory.

Note

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