National Governance The State's Role in Steering Polycentric Action

JOANA SETZER AND MICHAL NACHMANY

3.1 Introduction

The landscape of climate governance has changed considerably in the past decades. From being dominated by scientists on the Intergovernmental Panel on Climate Change (IPCC) and national governments under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC), climate governance is now populated by actors and institutions ranging from businesses, local governments and civil society organisations, to novel hybrid forms including offsetting standards, emissions registries, carbon-labelling schemes and collaborations between cities (Hoffmann, 2011; Bulkeley *et al.*, 2012; Bulkeley *et al.*, 2014; Hale, 2016).

The theory of polycentric governance attempts to explain this dynamic scene by offering a more holistic and inclusive view of climate governance. Chapter 1 identifies three defining features of polycentric governance: (1) it operates at multiple centres of decision-making authority with overlapping jurisdictions, which (2) interact through a process of mutual adjustment and with (3) their interactions generating a regularised pattern of overarching social order. However, some of this scholarship often underappreciates or even entirely neglects the role of the state in polycentric governance. For instance, emphasising the lack of hierarchy in polycentric systems, some scholars suggest that states cannot, or will not, be relied on, because a multitude of other actors will provide alternative mechanisms and solutions (Skelcher, 2005). It is also argued that engaged and autonomous non-governmental actors can enhance the state's capacity to deliver (Hooghe and Marks, 2003; Newig and Fritsch, 2009; Bixler, 2014). The underlying argument is that states are often weak and distant from the societies they govern, and that by providing autonomy to alternative authorities, there is an increase of trust, which in turn improves accountability.

Others acknowledge the importance of the state and of actions taken at the national level. Within a polycentric approach to climate change, Elinor Ostrom asserted that 'solutions negotiated at a global level, if not backed up by a variety of efforts at national, regional, and local levels ... are not guaranteed to work well' (Ostrom, 2009: 4). Nation states and their governments are, thus, part of an 'increasingly diversified structure of climate governance, with its multiple actors' (Dorsch and Flachsland, 2017: 47).

We set out to understand the role of the state in an ever-more polycentric setting. Is it simply one of many actors in a non-hierarchical structure, its functions replaceable by those of other actors? Or does it maintain a unique position? As a starting point, we unpack some of the state's more relevant characteristics. We focus on the functions of states' domestic governmental institutions performed by their three branches – the legislative, executive and judicial – and on their interactions with subnational governments, individuals and civil society groups at the national level. These particular features of domestic political structures make the state a polycentric actor in itself, acting within a broader, polycentric environment. In specifying the roles of the state in polycentric climate governance, we examine states as a particular polycentric domain, where state institutions and social actors interact, and we focus our attention on how climate change is – and at times is not – scaled down from national to subnational governments, and from governmental to non-governmental spheres.

In terms of their capabilities, states are both rule-makers and rule-enforcers. States with legitimate democratic mandates represent collective interests and have the power to grant and deny other actors their liberties (e.g. by imprisoning them), to collect and distribute money and to regulate financial flows. States are also significant economic actors, with global public expenditure amounting to an average of 17 per cent of gross domestic product (World Bank, 2017). While no other actor in society can challenge the formal political mandate of the state (Peters and Pierre, 2016), in societies governed by the rule of law, with an independent and impartial judiciary, states can be held accountable for their actions and lack of actions. Moreover, states' legal frameworks, which are rooted in actions taken in administrative, legislative and judicial settings, are then augmented by rule-making decisions taken by individuals in particular settings (Ostrom, 2005: 20).

With respect to climate change, states are a central focal point for the implementation of mitigation and adaptation efforts. This role was further acknowledged by the Paris Agreement (2015) when it made states responsible for formulating, reporting and updating their nationally determined contributions (NDCs). States are also the organisations that are expected to implement the policies to give effect to NDCs (Purdon, 2015), and thus promote the changes in societal processes that will allow climate action and sustainable development to move forward. In turn,

these actions will influence patterns of consumption and production, encouraging investments in low-carbon technologies, etc. (Boasson, 2015). In a nutshell, states stand out distinctly among the vast number and types of actors in the world of polycentric climate governance.

We approach the participation of the state in polycentric climate governance by focusing on two roles. The first is *regulating*, defined as 'the intentional activity of attempting to control, order or influence the behaviour of others' (Black, 2002: 19);¹ this role is carried out by the legislative, executive and judiciary branches of government. The second is *mobilising* others (such as subnational units of the state and non-state actors) to act. Courts carry out both these roles by holding the state and other actors accountable to regulatory frameworks, and by ruling on cases which set norms and directions for all actors to follow.

In highlighting these two roles, we take the position that *governing* (by national governments) is not opposed to *governance* (by non-state actors), but rather a fundamental building block that establishes structures and frameworks that interact extensively with other actors in the wider, polycentric climate governance landscape. Overall, we assert that, by providing increased regulation and mobilisation, domestic governmental institutions contribute to – and enhance – polycentric climate governance.

3.2 Regulation: Rule-Making by the Legislative and Executive Branches

Using their capacity to set and enforce rules, in the past two decades, legislatures and administrations have been developing, passing and implementing climate legislation and policies (Lachapelle and Paterson, 2013). Since the Kyoto Protocol was adopted in 1997, climate legislation and policymaking has been on a steady rise, and the number of climate laws and policies has increased twentyfold, nearly doubling every five years (Nachmany *et al.*, 2017b). According to the 'Climate Change Laws of the World' database,² by mid-2017 there were approximately 1,300 laws and policies in the 175 countries covered in the database. On average, states have almost eight relevant laws or policies; among the least developed countries the average is fewer than six per country, although they are catching up with the rest post-Paris (Nachmany *et al.*, 2017a).³ The rate of adoption of new laws and policies peaked during the period between 2009 and 2013 at approximately 100 per year. The rate dropped to around 40 new laws in 2016, as the existing body of laws already covers substantive ground.

Since the quantity of laws and policies does not necessarily reflect the quality, depth or even the breadth of the climate actions they govern, it is worth noting some of their characteristics.

3.2.1 Characterising National Climate Laws and Policies

Some rules are set by laws, passed by parliaments, and others are set by policies, decrees or strategies of similar nature, passed by the executive branch (these not merely implement rules set previously by laws but rather set rules in their own right). More than half of the rule-setting interventions recorded in the 'Climate Change Laws of the World' database are executive, not legislative.

Differences between the types of act can be traced to different phases of the policy cycle, as well as to different regulatory traditions. Legislative action requires high capacities and political will, and hence often occurs at an advanced stage in the policy cycle.⁴ Executive action, on the other hand, could be favoured due to centralised political and decision-making authority structures. Alternatively, it may indicate that the country is in an earlier phase of policy development, as many executive policies include the intention to be written into law if and when political conditions permit. An example is Kenya's Climate Change Act of 2016, which developed from the National Climate Change Response Strategy of 2010. Different regulatory cultures may also be accountable for the choice of executive over legislative interventions. In China, for instance, the National Commission for Reform and Development (the government) leads on policymaking (Averchenkova *et al.*, 2016). In many other developing countries, climate policy is often embedded in comprehensive national development plans that rank highly in terms of their political importance.

The scope of climate laws and policies is also quite wide. Some explicitly address climate change mitigation and adaptation, while others facilitate transitions to low-carbon economies, for example by supporting renewable energy or reducing deforestation. Recent laws and policies that have been introduced are generally broad in scope – either creating overarching regulatory frameworks for climate change or incorporating climate change into broader development plans. More than three-quarters of countries have an overarching legislative framework or strategy that addresses climate change. Clare, Fankhauser and Genaioli (2017) find that the passage of a framework law facilitates further regulation. Indeed, in addition to climate frameworks, almost all countries have adopted more specific, topical regulation governing areas such as energy, agriculture, deforestation and transportation. In addition, climate change clauses and considerations are also incorporated into broader thematic regulation, such as green growth plans or development policies. These are particularly important for overcoming the institutional silos which inhibit collaboration between actors in different sectors (e.g. Burch, 2010; Pasquini, Cowling and Ziervogel, 2013).

In the coming years, filling gaps within the body of existing laws and policies, as well as ratcheting up efforts over time as prescribed by the Paris Agreement, is

likely to result in a small increase in the overall number of laws and policies being adopted. The challenge will lie in ensuring that they strengthen the existing frameworks, pursuant to the long-term aims of the Paris Agreement. Although many national governments started formulating climate policies later, low-income countries are progressively active on climate change legislation.

3.2.2 National Laws and Policies in a Polycentric Governance Context

National laws and policies – even with such variation in the instruments adopted and in their content – are important features of a polycentric governance system. Not only do they enhance incentives for climate mitigation, provide mechanisms for mainstreaming and serve as a focal point for actors (Dubash *et al.*, 2013; Michaelowa and Michaelowa, 2017) but, more generally, national laws and policies constitute 'overarching rules' (see Chapter 1). Here we consider the aspects of laws and policies that make them especially key features of polycentric governance systems.

First, laws and policies create specific policy instruments, which can be used in a variety of ways. Such policy instruments can restrict activities (e.g. emission caps or restrictions on deforestation), mandate activities (e.g. green procurement requirements or a requirement to formulate local adaptation plans) or provide economic incentives for carbon reduction (e.g. emissions trading systems; see Chapter 13). The state also governs the mandatory collection and distribution of funds through its tax and budgetary regimes – a significant power that no other actor possesses.

Second, laws create institutional arrangements that define responsibilities for actors at various stages of the policy cycle. These could include informational responsibilities such as greenhouse gas accounting or risk assessments; policy formulation and reformulation; policy implementation through coordination; monitoring, evaluation and reporting of performance; and finally, reformulation of policies in accordance with the need to strengthen national commitments over time. Creating stable institutions and improving transparency and financial stability not only sets rules of operation but also contributes to developing countries' access to international climate finance. Absent or weak regulatory frameworks and institutions constitute a major risk to flows of climate finance, deepening poor countries' vulnerability to climate change even further. States that are party to the Paris Agreement should specifically mobilise climate finance using 'a wide variety of sources, instruments and channels' (Article 9). In a broader context, regulatory instability weakens the credibility of the commitments taken by states, which may hamper the willingness of other states to take climate action (Averchenkova and Bassi, 2016).

Third, climate change laws can also facilitate the integration of climate change into different aspects of regulation and mainstream climate considerations into multiple institutions and policies, inside and outside government. As such, states use climate law to orchestrate other actors (see Chapter 11). For example, the Micronesian Climate Change Act makes it compulsory for government offices and departments to mainstream climate considerations into their plans and policies. This model, which creates shared responsibilities amongst specialising actors, can be perceived as a miniature version of polycentric governance — whereby different ministries and agencies are obligated or encouraged to partake in climate action.

Finally, national legislation lends credibility to governments' commitments, making the implementation of international agreements both more likely and more meaningful (Averchenkova and Bassi, 2016). This is particularly clear in the regime established by the Paris Agreement, which relies heavily on national governments to implement mitigation policies voluntarily in line with their NDCs.

These characteristics of national laws and policies suggest that 'overarching rules', both within states and also at the international level, constitute another key feature of polycentric climate governance (see Chapter 1). Although a need for overarching rules may seem at first counterintuitive in relation to other features of polycentric governance (e.g. localism and self-organisation), aspects of monocentricity can and do coexist with polycentricity. In this regard, Aligica and Tarko (2012: 237) even define polycentrism 'as a structural feature of social systems of many decision centers having limited and autonomous prerogatives and operating *under an overarching set of rules*' (our emphasis).

3.3 Mobilisation: Supporting Action by Non-state Actors

In addition to the formal rule-setting capabilities discussed earlier, states are also suited to create and facilitate non-state action. As Kahler (2017) argues, states 'remain prominent governors, setting boundaries and benchmarks as well as engaging as partners with an enlarged and diverse universe of actors'. Similarly, Peter and Pierre's (2016: 5) definition of 'government' takes into consideration both the formal structures of the public sector and the set of actors exercising state power (a state-centric conception of governance), as well as the interaction with – and mobilisation of – other actors in society to perform key governance tasks. States, thus, can mobilise or 'orchestrate' actions across levels of government as well as across types of actors (Hale, 2016; see also Chapters 4 and 11).

The idea of states mobilising non-state action is clearly spelt out in the Paris Agreement (2015). Recognising the polycentric nature of the system, the Paris

Agreement acknowledges that climate action cannot and should not be taken by states alone. The Agreement specifies that states will operate in a coordinated manner to enhance public- and private-sector participation in the implementation of the NDCs (Article 6). It also recognises that climate adaptation is a challenge with local, subnational, national, regional and international dimensions, and requires the state to take those into account when formulating adaptation strategies (Article 7).

But mobilisation of non-state actors by the state is a hugely difficult task to perform, not least because of the 'increasing complexity of society, and the limited effectiveness of traditional policy instruments to shape social behaviour and markets in the desired directions' (Peters and Pierre, 2016: 11). As a result, the interaction between state and non-state actors may be complementary (Andonova *et al.*, 2017) and reinforcing (Roger, Hale and Andonova, 2017), with states addressing weak capacities and low accountability of non-state action (Widerberg and Pattberg, 2015; see also Chapter 10), yet it can also be contradictory (Cao and Ward, 2017). Acknowledging these difficulties, we now turn to examine how, in a polycentric setting and from a domestic perspective, national governments may mobilise subnational and non-governmental climate action.

3.3.1 Mobilising Subnational Governments

Where vertical types of coordination are observed between different levels of government, national governments often establish national targets and represent the countries' interests in supranational or global forums, while subnational governments implement regulations so that the targets are reached. This is the case in federal structures, where central governments set standards that should be met in each of the jurisdictions, and lower levels of governments make local policies for their own constituencies (Engel, 2005).

In many governance structures, there has been a shift from the national to local levels, with more functions of the (national) state performed by subnational and local governments (see Chapter 1). In the environmental and climate contexts, this shift has been understood in terms of a rescaling process, which also recognises that subnational entities are actors in global governance in their own right (Andonova and Mitchell, 2010; Schroeder and Lovell, 2012). Especially in the area of climate governance, subnational governments often compensate for insufficient regulation at the national and international levels (Michaelowa and Michaelowa, 2017). Hundreds of cities, states and provinces in Brazil, Canada and the United States, to name just a few examples, engage in transnational climate governance and legislate more ambitiously than their national governments (Setzer, 2017). As part of the Paris process and accompanying initiatives,

subnational governments have several different options to continue establishing climate-related commitments and engaging internationally (see Biniaz, 2017). Such localisation of climate governance is cited as a positive feature of a polycentric governance approach (McGinnis, 2016: 25; see also Chapter 1). National governments should, therefore, mobilise and support subnational climate action.

However, some climate laws and policies might not be feasible at a subnational level. While climate policies should preferably be site-specific (Dorsch and Flachsland, 2017), it is not always possible for subnational governments to regulate certain emission sources (Setzer, 2015). Furthermore, national governments may view such attempts as undesired interventions. For example, in the United States, the Supreme Court has already invalidated climate state laws that it considered a risk to foreign affairs (LaMotte, Williamson and Hopkins, 2009: 409). The same can occur in relation to subnational attempts to forge interstate and international cooperation (Kysar and Meyler, 2008). In some cases, it has been possible to recast climate change as a domestic problem, allowing subnational governments to enact climate laws and establish carbon markets with other actors across borders (Peel, Godden and Keenan, 2012). In other cases, subnational governments are prevented from legislating, even if the national government has not articulated any policies (Rose, 2008: 673). As climate change is a global problem, certain jurisdictions consider it part of the realm of foreign affairs, which is the prerogative of the national government (Farber, 2008). When mutual adjustment between governing units cannot be achieved,⁵ subnational governments may have limited competence or capacity to legislate or enact climate policies.

Despite these legal limitations on subnational action, national governments have a direct interest in what their subunits are doing with respect to climate change. At the same time, national governments have the challenge of grasping the impacts of such subnational action; simply evaluating the extent to which their actions contribute towards achieving national climate targets can be very difficult. This indicates once again how national governments are part of a wider polycentric system, as well as a polycentric domain in themselves, and they are imbricated in such a way that one cannot be understood without the other.

3.3.2 Mobilising Non-governmental Actors

In addition to mobilising subnational governments, national governments also mobilise non-governmental actors, most prominently businesses and civil society. In many countries, non-governmental actors engage in policymaking by providing ideas about policies and programmes, and contributing means to the achievement of policy ends (Peters and Pierre, 2016: 34). In advancing climate action, non-

governmental actors often play a critical role, as they compensate for failing policies and institutions at the national or international levels (Hoffmann, 2011). Nevertheless, non-governmental actors also depend upon and benefit from frameworks and incentives provided by national governments.

First, national governments drive forward private initiatives. Businesses and non-governmental organisations (NGOs) often rely on governments to initiate actions, formulate priorities, coordinate efforts or legitimate their decisions (Van den Brande, Bruyninckx and Happaerts, 2012: 5). Even in a polycentric system, national governments set a trajectory for non-governmental actors, defining goals towards which actions should be oriented, either in terms of emission reductions or in terms of increased resilience to the impacts of climate change. For example, the United Kingdom (UK) Climate Change Act specifies long-term emission reduction targets, supported by short- and medium-term targets called 'carbon budgets' that are reviewed periodically. Norway's main climate policy, the Climate Settlement, specifies that the country will become carbon neutral by 2050.

Thus, national governments have an important role in signalling to the private sector that it can support innovation, providing incentives to various actors to invest in research and development and overcoming barriers such as facing high costs of transformation. Backing the targets with laws and incentive structures and setting an example (e.g. by regulations for the public sector) provides much-needed certainty for investors. Laws like South Korea's Framework Act on Low Carbon Green Growth, which encourages the development of green industries and the transformation of traditional industries to low-carbon ones, reduce uncertainty and provide a space for businesses to develop and transform. On the other hand, regulatory instability and policy reversals may disrupt businesses and investors, potentially leading to devastating implications for green industries, as illustrated by the renewable energy feed-in tariff cuts in Spain following the 2008 financial crisis.

Second, national governments create accountability mechanisms by mandating consultation, reporting and oversight arrangements. For example, the UK government is legally obliged to consult the Climate Change Committee on setting and meeting carbon budgets, as well as adapting to climate change. In addition, the institutions created by the state serve as vessels to facilitate policy continuity, legitimacy and effective enforcement (Willems and Baumert, 2003; Nachmany, Abeysinghe and Barakat, 2017a).

Lastly, a government's ability to act is relative to that of non-governmental actors. Governments have the capacity to upscale non-governmental action, thus contributing to reducing costs and improving technologies such as renewable energy or energy-saving solutions, where vertical policy interventions by higher levels induce horizontal dynamics (Jänicke, Schreurs and Töpfer, 2015). Having

governmental power and capacities as a backbone to the weaker and/or diffused capacities gives leeway to those with weaker ones to make mistakes, or to not deliver on their agendas – trusting that there will be coordinated action to compensate for their shortcomings.

3.4 Regulation and Mobilisation: Judicial Law Enforcement and Challenging the State

The three branches of the state – legislative, executive and judicial – interact amongst themselves in multiple ways. A functioning judicial system dedicated to the rule of law contributes to ensuring that the state guarantees civil and political rights (Slaughter, 1995: 511). In the context of climate change, the courts play a double role, both enforcing existing climate laws and policies and directing action by state and non-state actors. As Peel and Osofsky (2015) argue, litigation is a forum for enforcement and interpretation of the law, as well as a site of potential regulatory development. Used strategically, litigation offers another possible response to inadequate lawmaking activity by governments and also prompts wider policy change. This dual role of the courts in climate litigation – enforcing the law and challenging the state and large emitters – illustrates polycentricity in action within the state.⁶

Climate litigation is a growing phenomenon. In the past years, in many countries, local and regional authorities, businesses, NGOs and individuals have been involved in climate litigation. There have been nearly 700 cases of climate litigation in the United States, and more than 250 court cases across 25 other jurisdictions. Governments have been the defendants in most of these cases. For instance, in the 25 jurisdictions for which data are available, excluding the United States, 79 per cent of the cases are against governments. Corporations are the second most common defendants (13 per cent of cases). Previous research similarly suggests that in the United States, the government has also been the defendant in the majority of cases relating to climate change (Markell and Ruhl, 2012). Out of the 201 cases filed prior to 2010, governments (federal, state and/or municipal) were named as defendants or co-defendants 204 times. Corporations were defendants in 45 cases.

In some cases, climate litigation aims to drive climate action in countries that lack comprehensive policies or legislation to address climate change. Plaintiffs hope that their claims will fill a governance gap in the short term and spur legislation and regulation in the longer term (Setzer and Bangalore, 2017). A favourable court decision could allow national or subnational governments to regulate greenhouse gas emissions and implement climate policies, even when there is no specific legislation. In the United States, litigation has been driven by the

absence of a comprehensive federal legislation that addresses climate change. In this context, court decisions might even replace the need for legislation. For example, the ruling in *Massachusetts* v. *United States (US) Environmental Protection Agency* by the Supreme Court in 2007 not only created a legal basis for regulating carbon dioxide emissions but also formed the basis for a bilateral deal with China, and the Obama government's participation in the Paris Agreement (Carnwath, 2016).

In other cases, lawsuits are brought to enhance climate action in countries that already have climate regulation in place, and is geared to interpret or enforce existing legislation. An example is the case of *Ashgar Leghari v. Federation of Pakistan* in 2015, in which the national government was found to have failed to implement its climate policy. Another example is *Urgenda Foundation v. Kingdom of the Netherlands*; in a 2015 decision, the District Court of The Hague ruled that the Dutch government is required to reduce its emissions by at least 25 per cent by the end of 2020 compared to 1990 levels.

However, the capacity of courts to contribute to effective climate governance should not be overstated. In addition to these cases where climate litigation is brought as a means to strengthen climate action, litigation can equally be used to oppose climate laws and policies, most commonly because such instruments affect private commercial interests (Hilson, 2010). For example, coal companies opposing regulatory emissions reductions have used the courts to challenge clean energy measures. Even if an examination of the outcomes of climate litigation suggests that so far courts are mostly strengthening, rather than hindering, climate regulation (Setzer and Bangalore, 2017), in the lawsuits so far identified in jurisdictions outside of the United States, 40 per cent of the cases were brought by corporations against governments and government agencies, but also against NGOs and individuals.

Viewing litigation as an appropriate site for regulatory development to address climate change is also controversial. Sine argue that strategic climate litigation has been largely political, having no plausible legal basis or chance of success (Zahar, 2015: 24). Courts and tribunals still have to consider whether the law can and should recognise climate change as a problem and respond to it (Fisher, Scotford and Barritt, 2017: 184). Procedural questions over separation of powers, legal standing, jurisdiction or the scope of permissible review also constitute significant obstacles to cases in many jurisdictions.

Another concern is that the majority of cases taken thus far to courts have not addressed climate policies and legislation or wider emission reductions. Instead, lawsuits have aimed at specific projects (e.g. coal-fired power plants, wind farms or coastal homes), commonly brought under land use and planning laws, or at details regarding the implementation of existing climate policies.

As with other climate governance initiatives in polycentric systems, lawsuits dealing with specific projects at the local level have seen more success, while ambitious attempts to promote significant mitigation still constitute the minority of cases. The few examples of successful strategic climate litigation cases are *Massachusetts* v. *US Environmental Protection Agency* and the *Urgenda* case, which push for more aggressive national climate change mitigation policies, and *Coalition for Responsible Regulation* v. *US Environmental Protection Agency*, which challenge the legal bases for US mitigation policy.

But while climate change litigation may not provide the whole answer to the problem of climate change, it is increasingly clear that it will be an important part of the answer (Peel and Osofsky, 2015). Despite some limitations, rather than simply a forum for enforcement, courts are a site of potential regulatory development of the law (Peel, Godden and Keenan, 2012). New strategic cases brought by NGOs, local authorities and public prosecutors involve a great deal of experimentation. Although so far there are few cases in which the judiciary has improved existing regulatory outcomes, in a polycentric climate governance scenario, courts are likely to continue being used to pressure for future regulatory decision-making to be more responsive to climate change (Peel and Osofsky, 2015: 308). As Ostrom (2005) acknowledged, the rule of law depends on actions taken by the state, as well as by individuals, and all of these actors are potentially involved in lawsuits dealing with climate change. Climate litigation is a potentially powerful mechanism offered by the state, which allows nonstate actors to hold governments to account for insufficient lawmaking, and corporations for current and historical emissions. In addition, instances of strategic litigation that seek to push for more aggressive mitigation policy have been initiated particularly since 2015; this is likely to be a growing trend.⁹

3.5 Conclusions

Through legislative, executive and judiciary branches, national governments remain key actors in the changing climate governance landscape, particularly in the post-Paris period, in which there is an increased reliance on states' ambitions and on their capacity to establish and implement ambitious policies, mobilising subnational and non-governmental actors.

This chapter has explored the roles of the state in the context of polycentric climate governance, asking if functions performed by the state (a polycentric actor in itself) can coexist with the logic of polycentric governance. At first, it is difficult to envision how the built-in hierarchy fits in the deeply complex and dynamic polycentric setting. Yet, the unique role of states requires some theoretical reconciliation with the logic of non-hierarchical polycentric governance. Without

challenging the concept of polycentric approach to climate governance, we claim that states and their governments play a central role, which cannot be filled by any combination of non-state climate activities. National regulation is unique in that it sets rules and a trajectory for other actors. Also, overarching rules can potentially promote effective coordination at the societal level. But this does not imply a hierarchy of importance, as the concerted action of other actors is required more than ever. This is why, in practice, the extent and quality of coordination should remain an empirical question (McGinnis, 2016), and not part of the basic definition of polycentric governance.

In this context, a polycentric approach to climate governance should be able to accommodate governmental action intertwined with non-governmental, as well as governmental units at different levels, competing and cooperating, interacting and learning from one another (Cole, 2015). Nevertheless, effectively implementing rules and mobilising others to action are difficult tasks to perform, and even harder to measure. The challenges to shape social behaviour and markets towards a low-carbon economy are many and varied. With that, state regulation and the mobilisation of subnational and non-governmental actors in future years is likely to encounter only varying degrees of success.

Notes

- 1. Black (2002) notes that the element of intentionality excludes market forces, social forces and technologies, although these may control the actions of others.
- 2. The 'Climate Change Laws of the World' database covers climate change laws, policies, executive orders and key executive strategies of comparable nature in 175 countries, together accounting for more than 95 per cent of global greenhouse gas emissions. It is accessible at www.lse.ac.uk/ GranthamInstitute/legislation.
- 3. Out of 48 least developed countries, only 3 do not have any recorded climate laws or executive policies.
- 4. For example, in the group of least developed countries, under a quarter of policy interventions are set by legislation, compared with 60 per cent in G20 countries (Nachmany *et al.*, 2017a).
- 5. Vincent Ostrom (1999: 57) defined a polycentric system as 'one where many elements are capable of making mutual adjustments for ordering their relationships with one another within a general system of rules where each element acts with independence of other elements'.
- 6. The role of the judiciary is seldom fully acknowledged by scholars investigating climate governance. However, Osofsky (2011) argues that climate litigation has an important 'diagonal quality' that can create new intersections between different levels of government and different actors public and private concerned with climate change.
- 7. Data for all countries save the United States are found in the 'Climate Change Laws of the World' database. The database for climate litigation in the United States is maintained by the Sabin Center and by Arnold and Porter Kaye Scholer LLP.
- 8. In some cases, more than one level of government is named as a co-defendant.
- 9. The most recent cases are already dealing with NDCs. For example, in *Thomson v. Minister for Climate Change Issues*, the adequacy of New Zealand's intended NDC was challenged for allegedly falling short of the emissions reductions required by the country's Climate Change Response Act of 2002.

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