CHAPTER 2

Maximising Goal Coherence in Sustainable and Climate-Resilient Development? Polycentricity and Coordination in Governance

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2.1 Introduction

The 2030 Agenda for Sustainable Development and the Paris Agreement—both, respectively, adopted and concluded in 2015—are the main global transformation strategies in terms of achieving a sustainable society with an ecologically sound and economically viable future. The 17 Sustainable Development Goals (SDGs) that accompany the 2030 Agenda demonstrate broad international agreement on the multifacetedness of sustainable development, as well as the interlinkages between the different areas of sustainability. The achievement of one SDG is likely to positively or negatively affect progress on a number of other SDGs (International Council for Science [ICSU] and

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International Social Science Council 2015). In that regard, the highly transformative nature of SDG 13 on climate change means that this goal directly interacts with a large number of SDGs, and indirectly with all SDGs (Intergovernmental Panel on Climate Change [IPCC] 2018; von Stechow et al. 2016). This aspect is clearly reflected in countries' nationally determined contributions (NDCs), submitted under the Paris Agreement, where Dzebo et al. (2017) found numerous links between forwarded climate-related activities and the SDGs.

Given these strong interactions, a focus on goal coherence between climate action and sustainable development priorities appears to be well suited to advance policy coherence more broadly (Gomez-Echeverri 2018; Winkler et al. 2015), and it therefore stands as the main focus in this chapter. Hereby, climate action is understood as all efforts taken to reduce greenhouse gas emissions and strengthen resilience and adaptive capacity to climate-induced impacts (United Nations General Assembly [UNGA] 2015, p. 23); sustainable development action is referred to as all adopted measures to achieve economic, social, and environmental development "without compromising the ability of future generations to meet their own needs" (Brundtland et al. 1987, p. 41; UNGA 2015, p. 3). In that sense, sustainability is a state, whereas sustainable development is a process.

A consideration of coherence between the global challenges of climate-resilient and sustainable development is necessary for three reasons. Firstly, climate change would have widespread impacts across multiple SDGs in itself. Secondly, to keep global warming well below 2 °C, the world needs to undergo a deep socio-economic transformation (IPCC 2014). For this reason, SDG 13 on climate action is one of the goals of the 2030 Agenda that requires the most effort (Nicolai et al. 2015). Thirdly, efforts related to other SDGs are also likely to increase or reduce the level of greenhouse gas emissions (United Nations Environment Programme [UNEP] 2016) and affect the ability of communities to adapt to climate change. Hence, mainstreaming climate-development interactions throughout sustainable development processes is essential for policy coherence.

Interactions and coherence between climate and sustainable development and opportunities for policy integration have been studied for decades (Beg et al. 2002; Nordhaus 1977; Swart 2003). For instance, various scholars have conducted comprehensive assessments of multiple climate measures and development dimensions (IPCC 2014, 2018; Kok et al. 2008; von Stechow et al. 2015, 2016), or assessments of narrower development areas such as air quality (Bollen et al. 2010; Braspening et al. 2016), energy security (Bollen et al. 2010; Guivarch and Monjon 2015), energy poverty (Chakravarty and Tavoni 2013; Solaymani et al. 2015; Ürge-Vorsatz and Tirado Herrero 2012), or energy in general (McCollum et al. 2018; Nerini et al. 2018). Although climate action tends to have mostly positive impacts on sustainable development in the long term, trade-offs are also likely to occur (IPCC 2018), for instance higher biofuel demand could negatively impact food security and increase land competition (Hasegawa et al. 2018). Policy coherence that

maximises synergies and limits trade-offs is therefore essential for an effective implementation.

This chapter brings together three governance discussions, namely on coherence in sustainable and climate-resilient development, emerging polycentricity, and coordination tools. It argues that the predominant focus in addressing polycentricity—by policy-makers and researchers alike—has so far been on addressing functional deficits, for example closing the global mitigation gap, or financing gaps. This remains true despite the increased level of attention being given to the polycentric nature of both sustainable development and climate governance. However, a focus on functional gaps does not help overcome goal incoherence—the imbalanced implementation of internationally agreed goals. In fact, the voluntariness and self-organisational nature of polycentric governance could actually increase the level of incoherence in implementation. Therefore, we argue that insights on the emerging polycentric structures in sustainability and climate governance should be combined with the growing knowledge on goal coherence. The combination of these fields of knowledge could inform supportive policies in development cooperation as well as orchestration frameworks that ensure greater coherence in the achievement of multiple goals.

This chapter proceeds with a discussion of coherence and coordination to realise broad sustainable development. Subsequently, we discuss the growing polycentricity of sustainable development and climate governance as well as the recent coordination efforts between state and non-state actions that do not necessarily improve goal coherence. Finally, we discuss novel tools that could improve coordination towards goal coherence.

2.2 Coherence

The term "coherence" has been widely—and loosely—used in policy and research, referring to a wide variety of understandings, including coherence between actors, between levels of governance, between various policies and goals, and between goals and resources (Carbone 2008; Collste et al. 2017; Organisation for Economic Co-operation and Development [OECD] 2014; Tosun and Lang 2017). Moreover, related terms have been used interchangeably—for instance "policy coherence" and "policy integration", and "coordination" and "collaboration"—without clear conceptual distinctions (Hoebink 2004; Matthews 2011; Rogge and Reichardt 2016). In this chapter, policy coherence for sustainable development is referred to as an "approach and policy tool to systematically integrate the social, economic and environmental dimensions of sustainable development at all stages of domestic and international policy making" (OECD 2018, p. 83). In this context, integration is achieved by fostering synergies and by identifying and reconciling trade-offs between competing goals and objectives of the three development dimensions and of national and international policies. Policy synergies occur when a mix of (two or more) policies complement each other in a way that

enables greater achievements than the sum of individual policies, as the policies reinforce one another. Policies that lead to co-benefits beyond or in development areas outside of their main objective can also be seen as synergistic. For instance, a reduction in fossil fuel combustion to reduce greenhouse gas emissions would additionally improve air quality. Synergies may also emerge by improving education for girls (SDG 4), which will further enhance maternal health (SDG 3) and contribute to gender equality (SDG 5), poverty eradication (SDG 1), and economic growth (SDG 8) (Nilsson et al. 2016, p. 321). On the other hand, trade-offs occur when objectives or outcomes of a policy conflict with those of another policy. This could be the case of an energy tax that might meet the objective of improved energy efficiency but could increase the level of energy poverty in poor households. Similarly, improved access to energy for all (SDG 7) can negatively affect efforts for climate change mitigation (SDG 13). When trade-offs are present, they could be addressed with complementary measures that reduce negative impacts or through political compromises when no feasible measures are available to tackle the impacts. Unaddressed trade-offs are the main source of incoherence, as these would lead to policies cancelling out each other's benefits and to related governance inefficiency.

To achieve greater coherence, policy integration is essential to maximise synergies and avoid trade-offs between specific policy issue-areas (United Nations [UN] 2018, p. v). Such policy integration is characterised by purposeful interactions between actors from different sectors who create interdependencies through *cooperation* and *coordination* (Tosun and Lang 2017, pp. 554f.). In this sense, coordination refers to processes that bring together various institutions and actors to mutually formulate policies, standards, and procedures. Subsets of policy coordination are cooperation and collaboration, whereby policy cooperation is characterised by temporary and informal means of building relationships within and across institutions, and collaboration is based on voluntarism and driven by problem-solving (Bouckaert et al. 2010; Tosun and Lang 2017, p. 565).

To promote goal coherence and a successful implementation of all sustainable and climate-resilient development goals, institutions at all levels should agree on common approaches and cooperate to deal with interrelated problems (UN 2018, p. v). The achievement of goal coherence is dependent on multiple implementation levels and processes, such as adequate public administrative practices and the substantive engagement of various stakeholders, which can be referred to as "policy coherence".

Integrated policy-making is usually analysed from an institutional perspective by three dimensions of integration: horizontal integration across policy sectors, vertical integration across levels of government, and the engagement of all relevant stakeholders (Breuer et al. 2018; Giessen 2011a, b; Tosun and Lang 2017). Thus, stakeholders from the national, subnational, local, and societal levels need to align actions to achieve coherence (Beisheim and Simon 2016; ICSU 2017; UN 2018, p. vi). Referring to policy integration as a

process occurring at a meta-level "involves the use of specific instruments designed to integrate a set of considerations, issues, and stakeholders across different policy domains" (Tosun and Lang 2017, p. 555). Moreover, the pursuit of policy coherence should be understood from a procedural as well as an outcome-oriented perspective (Rogge and Reichardt 2016, p. 1622). Successful integration is thus a situation in which policies have obtained the highest degree of coherence (UN 2018, p. v) through coordination, cooperation, and political leadership (Tosun and Lang 2017, p. 557).

The cross-cutting nature of the 17 SDGs of the 2030 Agenda requires governments to break out of both policy and institutional silos and to embrace broader governance participation to ensure both horizontal (across sectors) and vertical (across actors) policy coherence. Following the Organisation for Economic Co-operation and Development categorisation of key areas in which coherence needs to be enabled (see Fig. 2.1), the comprehensive implementation of the 2030 Agenda will need coherence between global and national goals; across international agendas and processes; between economic, social, and environmental policies; between different sources of finance; and between the diverse actions of multi-actors and stakeholders (OECD 2014). In order to address coherence on multiple levels, close coordination is required at all stages of policy-making, guided by adequate institutions and mechanisms. All key areas of coherence are also relevant to development cooperation.

This chapter recognises the multi-dimensionality of coherence, emphasising both *goal coherence as the objective* to maximise synergies and avoid trade-offs between potentially competing objectives and goals to realise sustainable development at large, as well as the need to *coordinate* the efforts by a large number of actors (at multiple levels of governance) to ensure the maximisation of *goal coherence as an outcome*. Scholars have asked whether coherence is at all

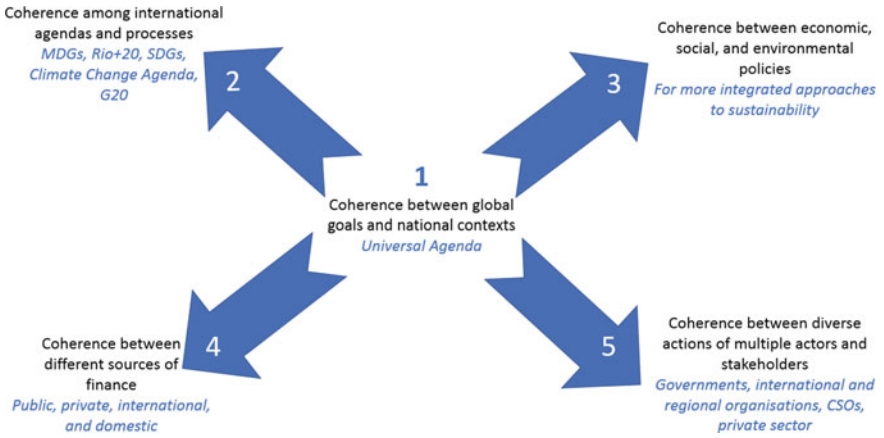

Fig. 2.1 Complementary levels of coherence for implementing the Post-2015 Agenda (*Source* Adapted from OECD [2014, p. 15])

possible in a complex Earth system that features many nonlinear interactions, and in pluralist governance contexts where a degree of incoherence seems inevitable, given the manifold interests and interpretations of what constitutes what is good (see Carbone 2008; Koulaimah-Gabriel 1999). However, we argue that even when complete goal coherence is not possible, the maximisation of coherence is desirable and necessary to realise sustainable development, and it can be partly realised through the integration of novel tools that identify how different goals are linked and what gaps are left by specific groups. Better identification of goal (in)coherence and gaps could also facilitate governance processes that build public support for cases where trade-offs are unavoidable.

2.3 Coordination

The *coordination* of efforts in sustainable development presents a problem that is related to goal (in)coherence, but it is even more about aligning a multiplicity of actors that contribute—or should contribute—to various aspects of sustainable development. Even if one assumes a limited number of national governments as the main actors in global sustainability politics—as is often the case in theories of international relations—goal coherence is not a very likely outcome. Countries are faced with different development realities in terms of state capacity, regime type, level of economic welfare, social equity, and human development. To further compound contested coordination and responsibilities, the number of actors beyond national governments—including civil society, businesses, and investors—that engage in sustainable development and climate governance is growing.

Although dispersed non-state and subnational efforts have left governance "fragmented", optimistic voices argue that "polycentric governance" could more effectively deliver on multiple goals and governance functions. A growing body of literature emphasises how decentralised and seemingly dispersed state and non-state efforts can address governance gaps (Bäckstrand et al. 2010; Haas 2004; Kropp and Türk 2017). For instance, private actors may be in a better position to devise sector-specific approaches; civil society organisations can effectively build constituencies to support specific sustainable development and climate actions; investors can leverage much-needed resources and help shift billions towards a sustainable and low-carbon economy; subnational and local communities can contribute to the achievement of global goals through concrete and context-specific projects; etc. One could argue that fragmentation of climate and sustainability actions could—perhaps somewhat counter-intuitively—improve the aggregate impact on global challenges. In large numbers and at sufficient scale, disperse and decentralised efforts could close the global climate mitigation gap, or sustainable development financing gaps. When climate and sustainable development challenges are closely interlinked in a mutually reinforcing manner, a good degree of goal coherence could thus be achieved without much coordination.

This theoretical possibility, however, is not supported by evidence. First, although the growing number of actors has often been hailed for their potential to solve global challenges, evidence of the effectiveness of (individual) non-state and subnational efforts is scattered and scarce. Moreover, even if these efforts are effective by any measurement, the scale of engagement by state and non-state actors is still insufficient to solve the most urgent sustainable development challenges (Chan et al. 2018). Second, coordination is increasingly a feature of emerging sustainability and climate governance systems; seemingly dispersed non-state efforts are linked among themselves and to international (and governmental) governance (Chan et al. 2019). What looks like a fragmented landscape of scattered sustainability and climate actions is in fact part of an emerging polycentric structure, as we discuss in the following section.

2.4 Emerging Polycentricity in Sustainable Development and Climate Governance

The overall narrative of the need for, and the emergence of, actors beyond states in sustainable development and climate governance is that traditional actors—in particular governments and international organisations—have failed, maybe not in terms of defining the goals or in setting up rules, but in terms of problem-solving (Beisheim and Simon 2016; Chan et al. 2015). Yet, the growing number of actors engaging in sustainability and climate actions still does not dissipate the calls for more and better coordination towards (coherently) realising sustainable development, as defined by the 2030 Agenda. One form of coordination could take the form of polycentric governance, wherein multiple non-hierarchical institutions are linked in order to more effectively address global sustainability and climate challenges.

Polycentric governance is characterised by the presence of multiple institutions, each with considerable autonomy to set their rules and norms in specific domains (e.g. Jordan et al. 2018; Ostrom 2010). The emergence of polycentricity, as noted by Pattberg et al. (2018), is not only observable from the growing number of institutions, but also (and particularly) from the increasing amount of interlinkages between different institutions. In the following, we note a particular—if stylised—pathway of emergence of polycentricity and the linkages that define it across both climate and sustainable development governance. Namely, (1) state-centred, hierarchical types of governance are increasingly seen as inefficient and ineffective in terms of problem-solving; (2) actors other than states develop initiatives that govern particular domains in conjunction with, or instead of, "traditional" public authorities; and (3) public actors, governments, and international organisations increasingly recognise the additionality of other actors as partners in governance, and they create linkages to more effectively fulfil governance functions such as implementing goals, co-producing norms, and standards, but also achieving political objectives (including the "rolling back of the state", the influencing of other governmental actors) and ulterior motives (e.g. "window-dressing").

2.4.1 *Polycentricity in Climate Governance*

With climate change, state-centred governance has long been the norm, despite obvious shortcomings. The epitome of a state-centred model for climate governance, arguably, was the Kyoto Protocol (KP), which divided responsibilities among developed countries to reduce emissions. However, most observers agree to the utter ineffectiveness of the KP (e.g. Vogler 2016). States simply retracted their participation in the KP when they failed to keep the terms (e.g. Canada, United States). In terms of problem-solving, the KP has done very little to reduce greenhouse gases. The failure to produce a climate agreement at the Copenhagen Climate Change Conference in 2009 not only demonstrated the failure to implement, but also the failure to reach further agreements. In the period between the 2009 Copenhagen and the 2015 Paris Climate Change Conferences, it became clear that, despite decades of negotiations, governments have largely failed to produce the necessary actions to halt global heating. If governments fail to take the necessary action, the only route may be one that predominantly features the contributions of the private sector and subnational entities. Indeed, scholars have noted the emergence of many non-state and subnational initiatives (e.g. Bulkeley et al. 2014; Hoffmann 2011). The proliferation of non-state and subnational climate actions has also been noted by international bureaucrats. For instance, at the start of her tenure as Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC), Christiana Figueres initiated the "Momentum for Change Initiative", which, for the first time, engaged non-state and subnational contributions in the context of the UNFCCC. The basic idea of engaging non-state and subnational actors in climate governance was subsequently further developed (Chan et al. 2016). To prevent a lost decade for climate action between Copenhagen and a yet-to-be-negotiated new agreement, governments initiated a negotiations workstream on "Pre-2020 Ambition".

This resulted in a Pre-2020 agenda, which recognised and promoted the role of non-state actors to make additional contributions towards closing the global mitigation gap. Non-state and subnational engagement gained an increasingly programmatic form in the run-up to the 2015 Paris Climate Change Conference; under the Lima-Paris Action Agenda, the Peruvian and French presidencies of the Conference of the Parties—with the assistance of the UNFCCC secretariat—mobilised more than 70 large-scale mitigation (and some adaptation) initiatives. Throughout the period, the number of actors stepping up with climate actions increased dramatically (e.g. UNEP 2018). A multiplicity of actors have gained authority in limited domains, such as networks of cities and regions (such as Local Governments for Sustainability (ICLEI), the C40 Cities Climate Leadership Group, Under 2 MOU), sectoral coalitions (e.g. SloCat, We Mean Business), and public–private initiatives (e.g. Climate and Clean Air Coalition, Mission Innovation). Including the individual initiatives to take climate action, the UNFCCC currently registers more than 12,000 largely new institutions and actors.

The mere existence of many climate actions and the greater involvement of all types of stakeholders do not itself constitute a polycentric governance system. However, in the wake of the emergence of non-state and subnational climate actions, we also observe a tight coupling between hierarchies and some of the newer institutions (Keohane and Victor 2011), as well as a convergence between distinct sets of actors, for instance in carbon accounting standard-setting (Green 2013). At the global level of governance, United Nations (UN) climate conferences have increasingly become a meeting point and the "heartbeat" of climate action, as non-state and subnational actors organise their schedules and time their outputs around them. The resulting governance system is therefore not only characterised by multiple actors, but also a high degree of linking and convergence through shared events, timing, and joint production. Importantly, governments and international organisations themselves are increasingly acknowledging the central role that non-state and subnational actors could play, particularly in implementing climate goals, and have moved to create linking institutions. The 2015 Paris Climate Change Conference not only produced the accompanying universal climate agreement, but also a decision to link the sphere of non-state and subnational actions through, for example, technical examination processes; the (continued) recording of actions and their progress; and the programmatic mobilisation and high-level showcasing of actions under the leadership of newly installed "High-Level Climate Action Champions". In the light of the changed logic of the Paris Agreement, this linking departs from a strictly multilateral, state-centred governance model towards more hybrid and goal-driven governance (Falkner 2016). Non-state and subnational efforts are no longer seen as substitutive to governmental efforts because both contribute to the achievement of self-determined national targets (so-called nationally determined contributions).

Beyond the UNFCCC context, other institutions also link the governmental and transnational spheres of governance. For instance, the Initiative for Climate Action Transparency is developing guidance for governments to include non-state action in the formulation of their climate goals (Initiative for Climate Action Transparency 2018). Therefore, governance is not only the site of fragmentation and contestation, but also of new linking institutions emerging from the seeming complexity of climate governance; governance is becoming polycentric. The patterns and shape of that polycentric structure to some extent answers the (perceived) shortcomings of the "traditional" state-centred climate regime and is, arguably, more inclusive of different environmental and industrial regimes (including the Ozone Regime, and shipping and aviation), thereby bridging the shortcomings of overly compartmentalised formal international regimes. These emerging polycentric structures in climate governance can also be found in sustainable development governance, as we illustrate in the following section.

2.4.2 *Polycentricity in Sustainable Development Governance*

In sustainable development governance—despite covering a much larger and diverse set of problems—we also see the budding of a polycentric governance structure comprising growing linkages between the actions of non-state actors and governments and international organisations (see Frey and Sabbatino 2018). Since sustainable development subsumes many themes and subsystems of governance—for instance, food governance, energy governance, biodiversity governance, etc.—the measure of polycentricity across various sustainability governance subsystems varies. For instance, Pattberg et al. (2017) argue for the development of institutional linkages between state and non-state actors in global biodiversity governance, largely following the example of climate governance.

The autonomous contributions of stakeholders, or at least their potential, was already acknowledged at the 1992 United National Conference on Environment and Development (also known as the Earth Summit) (Pattberg et al. 2012). The political outcomes included the Rio Declaration on Environment and Development, which stated that participation by all concerned citizens at all levels can best handle environmental issues (Principle 10). Nonetheless, the 1992 Earth Summit is best remembered for some of its more "traditional" intergovernmental outcomes, in particular the Convention on Biological Diversity, the Framework Convention on Climate Change, and the Convention to Combat Desertification. However, by the time of the 2002 World Summit on Sustainable Development (WSSD, also known as Rio+10), there was a prominent idea that these international agreements had not sufficiently been delivered upon. A widely shared diagnosis of the implementation gap was that governmental approaches had largely failed, negotiations were largely deadlocked, overly bureaucratic international organisations were not up to their tasks, and many national governments were bogged down by a lack of political will, bad governance, and a lack of resources. Subsequently, the problem is not the absence of international norms, but the lack of implementation and capacity to implement. The suggestion of more governmental approaches or regulatory frameworks was met with stark opposition. For instance, the United States made clear that they would not consent to any new agreements. Rather than developing new international frameworks and agreements, the focus of WSSD was therefore on the implementation of existing agreements. This time, governments went a step further than just acknowledging the potential of non-state and networked institutions. The main outcomes of the WSSD, which were rather unique at the time, included "Partnerships for Sustainable Development" (PFSD) that involve non-state and subnational stakeholders in making additional contributions towards the realisation of global sustainable development and the Millennium Development Goals (precursors to the SDGs). By opening a registry for Partnerships for Sustainable Development, it recognised contributions by non-state and networked institutions and invited them to align

activities in order to implement sustainable development. In a unique turn, the partnerships were presented as "type-2" official outcomes of the WSSD, complementing the more conventional intergovernmental political outcomes, which were dubbed "type-1". Initially presented as a success with the registration of more than 200 partnerships, the number of new registrations dwindled in later years. However, the agreement on the 2030 Agenda for Sustainable Development in 2015, which included the SDGs, gave new impetus to, once again, link the governmental and non-state and subnational spheres of governance. The SDGs themselves were the outcome of a constituency-based effort and advice from a governmentally nominated "Open Working Group". SDG 17 (Partnerships for the Goals) explicitly aims at the means of implementation and at revitalising the global partnership for sustainable development. This time, the new UN "Partnerships for SDGs" platform featured thousands of actions taken by a multiplicity of stakeholders, both individual and cooperative. Through events at the High-Level Political Forum as well as the Partnerships for SDGs platform, more participation is being encouraged. While it remains to be seen to which extent Partnerships for SDGs will contribute to the achievement of the goals, political controversy related to recognising them seems to have dissipated (see Mert 2009 on the institutionalisation of the partnership discourse). In particular, the private sector is not seen as a mere provider of resources, but also as development actor that provides leadership in tackling specific questions of sustainable development (Sachs 2012). This may be due to a growing acceptance of non-state and hybrid forms of governance, but also due to the fact that the SDGs were agreed upon in advance between governments. Moreover, in terms of linkages, we can clearly see increased linking between the non-state and subnational spheres of activities and the predominant process of sustainable development governance at the intergovernmental level around the 2030 Agenda and the High-Level Political Forum. In parallel to the Paris Agreement, the 2030 Agenda and the SDGs extended the need for development and sustainable goal achievement to developed countries—at least formally—thereby doing away with an implied hierarchical order that placed a large part of the burden for sustainable development on developing countries.

In sum, both in climate and sustainable development governance, we see a pattern towards growing linkages between actions and initiatives by non-state actors and governments and international organisations (see Frey and Sabbatino 2018). First, government-centred governance by itself is widely perceived as being ineffective and/or insufficient. Second, the number of non-state, subnational, and transnational initiatives has increased dramatically in order to respond to governmental shortfalls, and their contributions become more salient in view of governmental shortcomings. Moreover, actions across both the domains of climate and sustainable development governance are well connected, not only in terms of substantive linkages, but also institutionally, for example biodiversity governance (see Pattberg et al. 2017). There is increased linking between initiatives, as well as between initiatives and public

actors (governments and international organisations). It is therefore important to raise the question about whether polycentric governance systems—while linking actors across various substantive domains—also effectively address problems of incoherence. However, evidence of the effectiveness of (individual) non-state and subnational efforts is scattered and scarce, and evidence of the greater effectiveness of non-state engagement in governance systems is even scarcer. The promise that actors across a polycentric governance landscape could effectively address specific functional gaps in governance has motivated many policy-makers and international organisations to seek improved engagement, building new institutions and processes that link the realms of state, non-state, and subnational sustainable development and climate actions (Cole 2015; Tosun and Leininger 2017). However, even if non-state and subnational efforts proved to effectively address functional deficits and even help resolve global challenges—for example closing the global mitigation gap, or financing gaps—goal coherence cannot be taken for granted. In the following section, we discuss the effectiveness and risks of polycentric governance in achieving goal coherence.

2.5 Polycentric Governance and Coherence

According to, for example, Ostrom (2010), the emergence of polycentric structures holds promise for more effective governance, even in the absence of a hierarchy and monocentric, state-centred coordination. Polycentric structures may increase the amount of communication among different parties, leading to mutual trust and increased levels of cooperation. Moreover, a polycentric structure provides opportunities to improve policies over time through learning and experimentation (Cole 2015). Indeed, the growing acknowledgement of a multiplicity of actors in global sustainability and climate governance rests on the several optimistic premises concerning the emergence of multiple autonomous—but interconnected—state and non-state actors in governance. For instance, Chan et al. (2019), describing stylised arguments often used to support non-state engagements, point out optimistic expectations that non-state actors can conjure a greater effect through their sheer numbers. They also improve representation, maximise synergies by focussing on win–win constellations, and create a self-perpetuating dynamic by diffusing new norms, building coalitions, and strengthening proactive actors. On the particular point of synergies, they highlight the prevalent argument that "[w]ithout climate-resilient and sustainable development, all stand to lose, and existing achievements are at risk. 'Everybody wins' captures the view that non-state actor engagement brings overall benefits through win–win constellations" (Chan et al. 2019, p. 3). At the same time, they point out that—in practice—not everybody wins; for instance, despite growth in the number of non-state actors, the large majority of them are based in the Global North (Bulkeley et al. 2014; Chan et al. 2018, 2019). Moreover, even if more actors from the Global South are involved, most transnational and non-state initiatives

are led by North-based actors, raising doubts about whether the benefits of a polycentric governance system will proportionately accrue to developing countries.

In the following, we argue that emerging polycentric governance systems—and in particular the growing linkages between non-state and state actors—are seen as holding the potential to address governance gaps, but they do not address fundamental questions of incoherence. Rather, greater numbers of governance actors potentially increase the level of incoherence in terms of (1) unevenly addressing areas that have been identified as intergovernmental priorities; (2) unevenly distributed impacts of governance; and (3) largely ignoring trade-offs between goals within individual initiatives. These problems are compounded by two related characteristics of polycentric structures: a high degree of voluntariness and self-organisation.

Without aiming at a comprehensive overview, we contrast arguments that suppose a (theoretically) positive relation between polycentricity and coherence before providing evidence-based counterarguments.

First, one could argue that through multiple actors in polycentric structures, there is a greater functional alignment of capacities towards achieving goals. The possibility of self-organisation within a polycentric governance system allows new groupings, or "bricolages", that flexibly could further emancipation and transnational and regional cooperation (Mittelmann 2013). This was obviously the case when the WSSD referred to the PFSD as implementation instruments. Similarly, non-state and subnational climate actions are widely seen as contributions towards narrowing the global mitigation gap. However, the functionalist logic behind conceiving non-state and subnational efforts as "contributions" towards implementation is very limited, and it seemingly reduces their function to implementation. For this to happen, one needs to narrowly define non-state and subnational functions (mitigation, implementation) and ignore the political contingency of non-state and subnational choices. In this regard, the *absence* of non-state/subnational action should be considered equally as relevant, as this leads to uneven implementation—for example across various sustainability goals—leading to politically controversial outcomes and the incoherent implementation of goals.

Second, the current engagement of non-state and subnational actors is largely based on the idea of synergies of individual actions. For instance, Partnerships for SDGs and Pre-2020 Climate Action mostly include the "forerunners" within the private sector. Their actions are presented as a triple win (profit, planet, people), or wins across different substantive themes. However, this is not always the case. For instance, Mert and Dellas (2012) take the example of partnerships in the water sector, which seemingly align with the sustainability goals of the WSSD, namely improving public health and access to safe drinking water in developing countries. However, the chosen approaches and technologies have implications for environmental impact, maintenance and storage, equity of access, and self-reliance. For instance, partnerships that promote disinfection agents not only provide safe water, but also promote

behavioural changes and the creation of a market for such products, the cost of which could again prove prohibitive for some of the most vulnerable communities (see Stockman et al. 2007).

Third, one could also argue that the broader inclusion of a multiplicity of actors will—through inclusive processes and deliberation—lead to acceptable courses of action, even if some compromises must be made and not all trade-offs can be completely avoided. The universal and global inclusion of stakeholders, however, cannot be guaranteed, even when some of the most prominent institutions linking non-state actions and intergovernmental processes—the aforementioned Partnerships for SDGs and Pre-2020 Climate Action—are being administered by the UN. In fact, multiple studies demonstrate that patterns of inclusion across sustainable development and climate governance are highly imbalanced (Bulkeley et al. 2014; Chan et al. 2018; Hsu et al. 2015; Pattberg et al. 2012). Consistently, we see the overrepresentation of already influential (North-based) actors. This raises the question of whether such imbalanced inclusion could lead to equitable outcomes and address trade-offs in a manner that could carry the broad consent of those affected.

Fourth, the broad engagement in sustainable and climate-resilient solutions is good for all, or at least avoids the counterfactual of non-action, which is definitely bad for all (see Chan et al. 2019). In that sense, polycentric structures, featuring many actions, are seen to not only stimulate solutions but also overall growth, which is considered to benefit all (e.g. through job and wealth creation). However, this reasoning falls within a growth paradigm that critical scholars and many practitioners and policy-makers have rejected. Latour (2018), for instance, eloquently argues that much of the political action under an assumption of modernisation simply does not add up in the context of a finite planet. Infinite growth is impossible, and the "earth/territory" for people to "land" on is rapidly disappearing. Critics of neoliberalism, similarly, have argued that the inclusion of multiple actors into a "green economy" merely increases the resilience of an otherwise exploitative economy (Spash 2012; cf. D'Amato et al. 2017).

Finally, one could argue that non-state and transnational norms could improve coherence by complementing international norms, or by providing them where they are lacking, for instance in carbon verification standards or in sustainable forestry (e.g. Pattberg 2007). Polycentric structures could allow for a more comprehensive governance by bringing such norms into governance areas that were previously not—or only partially—governed by governmental and intergovernmental regimes (see Morseletto 2019). However, despite linking among multiple stakeholders through networks, transnational and non-state norms may still not have sufficient authority to ensure coherence and predictability in a governance system. For instance, the success of initially widely accepted transnational standards for sustainable forestry by the Forest Stewardship Council has also inspired alternative and competing accountability

systems, which could, again, challenge the Forest Stewardship Council (Chan and Pattberg 2008). Subsequently, there is no "stable" system of transnational governance that could reliably make up for the gaps left by governments and international regimes.

The above discussion does not assume the *absence* of coordination. In recent years, scholars have called for "frameworks" and "orchestration" to ensure better alignment between international goals and a large variety of non-state and subnational inputs (Abbott and Bernstein 2015; Chan et al. 2015). At the global level, programmatic efforts are taken to recognise and mobilise more—and to some extent more effective—transnational action. For instance, the aforementioned Lima-Paris Action Agenda and the Partnerships for SDGs platform mobilised and invited state and non-state initiatives, respectively, to demonstrate momentum towards a new climate agreement and to ensure a multiplicity of contributions towards the implementation of the SDGs. However, although such frameworks and programmatic efforts have taken shape internationally, they emphasise the need to respond to functional deficits, for example the engagement of more actors and their solutions; eliciting more quantitative financial or emission reduction commitments; or the provision of examples to follow. To ensure goal coherence, however, such a focus is too narrow. These frameworks use soft instrumentation, such as "recognition" and "visibility", that emphasise voluntariness and societal self-organisation. As a result, linkages between the governmental realm of climate and sustainability governance and non-state and subnational action primarily concerns "frontrunners" in specific areas of sustainable development. Although their potential to contribute to specific challenges is difficult to deny (Chan et al. 2018; Hsu et al. 2015; UNEP 2016, 2018), individual actors and groups focussing on particular functional needs on a voluntary basis are likely to be spread unevenly across multiple goals rather than preserve the integrity of the 2030 Agenda. Moreover, at the individual level of actions, actors are confronted with trade-offs and synergies in the approaches they choose. How efforts towards achieving one objective influence other objectives may be dealt with in very different ways, and often without a broader consultation with those affected. When trade-offs between goals are unavoidable, individual choices then lack social legitimacy. Without a better understanding of how a myriad of individual efforts deal with some of the most urgent trade-offs, it becomes difficult or impossible to preserve the integrity of a broader sustainability agenda and to maximise goal coherence.

We posit that existing frameworks and programmatic efforts have an important role to play in the preservation of the integrity of broad sustainable development—not only to tout synergic linkages between actors, goals, and sustainable development, but also to carefully consider goal incoherence and trade-offs between multiple sustainability objectives. While still acknowledging the impossibility of complete coherence, the maximisation of coherence could be helped by emerging approaches and tools, as we discuss in the following.

2.6 Novel Tools for Identifying (In)Coherence

In recent years, a number of tools and approaches have been developed that can be used to increase policy coherence among multiple goals. Such tools can, for instance, map the co-impacts of individual actions in one area on other sustainable development areas, attempt to quantify these impacts based on varied indicators or a unifying indicator, or support decisions between multiple options based on a set of predefined criteria.

One way to improve *horizontal coordination* across actors for an enhanced policy coherence is to raise awareness of the links between different sustainable development objectives and how actions towards a specific objective may support or undermine another. For instance, potential interlinkages between various SDGs and targets can be identified from correlations with past data of respective indicators (Pradhan et al. 2017; Zhou and Moinuddin 2017). A method that is unconstrained by data availability, but requires an understanding of co-impacts, is Nilsson et al.'s (2016) seven-tier scoring approach of impacts that indicate to what extent different goals are directly or inversely linked in a manner that is inextricable or creates an enabling environment for co-impact. The International Science Council (Griggs et al. 2017) applies this method to demonstrate the interlinkages between a number of SDGs. However, such a broad mapping of SDGs does not take into account the different country contexts and how different settings may affect the occurrence or relative importance of specific impacts. A related approach that would also help the *vertical coordination* and alignment of national and subnational climate and sustainability actions with the global agenda would be that of Weitz et al. (2017), who translate this scoring approach to the country level by applying it to the Swedish sustainable development context. Moreover, by going beyond mapping primary impacts to secondary impacts, they identified key clusters of highly interconnected SDGs that could help further determine groups of stakeholders that could effectively cooperate on these focussed development areas. Another way to address narrower development areas is to concentrate on the impacts of one SDG or target. For instance, if the main goal is to increase climate action, then the impacts of possible actions for the achievement of SDG 13 should be mapped individually using existing tools (IPCC 2018; Tilburg et al. 2018).

Other tools that link climate and sustainable development can help coordination across various actors by identifying the gaps left by a certain group. For instance, the NDC-SDG Connections tool (Brandi et al. 2017) and ClimateWatch (Northrop et al. 2016) analyse countries' NDCs under the Paris Agreement to map climate activities that directly tackle other SDGs and the mentions of keywords that can be directly related to other SDGs, respectively. Non-state actors could use these tools to identify synergies between climate and sustainable development that remain untapped by the state, based on the NDCs.

Although mapping could effectively help identify linkages between sustainable development areas and relevant actors, it is much more difficult to gain an understanding of the magnitude of respective impacts. In this regard, integrated assessment models and cost–benefit analysis have been suggested, with the latter perhaps being more preferable from a perspective of goal coherence.

Cost–benefit analysis distinguished itself by defining the overall impacts of a policy or project through a single unit, as aggregate (net) costs and benefits to human well-being, usually through a financial indicator (financial cost–benefit analysis) or as a measure of utility (social cost–benefit analysis). In the case of sustainable development more broadly defined, the social cost–benefit analysis can provide the added value of quantifying and monetising many development aspects that are not directly linked to the market (Atkinson and Mourato 2006; Patassini 2005). However, relying on only one final number can conceal important distributional effects across different stakeholders—who bear the costs and who gain from the benefits—but also across the different areas of sustainable development, for example high benefits to poverty reduction but substantial costs to health.

Contrary to cost–benefit analyses, integrated assessment models can complement mapping exercises by providing impact evaluations in both monetary and physical terms across a variety of sustainable development areas (Collste et al. 2017). Although most scenarios defined in these models are set to optimise for minimum costs of implementation, prioritising the economic aspect over the social and environmental costs of outcomes, optimisation by social and environmental indicators is possible. The Intergovernmental Panel on Climate Change special report on 1.5 °C of global warming shines a light on sustainable development costs and benefits of climate change mitigation and presents these in both physical and monetary terms (IPCC 2018). For instance, health benefits of keeping global warming limited to 1.5 °C instead of 2 °C is estimated to amount to 110–190 million fewer deaths and annual monetary savings of $100 billion per year by 2030 (equivalent to 35 per cent of the investment needed for air pollution control) (Shindell et al. 2018). To overcome the prioritisation limitations of impact mapping and quantification exercises, multi-criteria decision-making tools could furthermore give insight by attaching different weights to affected sustainable development areas, often through consultations with multiple relevant actors. Such a combination of qualitative and quantitative data could also help to overcome limitations where quantitative physical or monetary data is unavailable (Cohen et al. 2018; Dubash et al. 2013).

Coming to a better understanding of the impacts of policies on different development areas by using the above tools can improve coherent outcomes of governance when they inform the directing of resources towards areas where trade-offs appear or where gaps are prevalent, while avoiding duplication of action—for instance, diverting part of the air pollution control investments away from the areas where climate policy will contribute as a

co-benefit. However, we need to acknowledge that perfect coherence is impossible and that acceptable as well as legitimate outcomes in trade-off situations are necessary (e.g. Kuyper et al. 2017). The mere use of tools, even when they have improved significantly in recent years, cannot detract from the fact that decision-making at all levels is political. Especially in the case of trade-offs, participatory approaches are necessary to reach compromises and agree on priorities.

2.7 Conclusion: Implications for International and National Coordination and International Cooperation

Internationally, frameworks and programmatic efforts that promote non-state and subnational engagement could use tools in the assessment of the types of non-state and subnational sustainable development and climate actions. Generally, the assessment of non-state and subnational engagement—and the tracking of progress at UN-administered platforms, such as the Non-state Actor Zone for Climate Action and Partnerships for SDGs—has been fairly weak. To understand the overall impacts on sustainable development, it is not only necessary to understand the performance of individual initiatives vis-à-vis the goals they want to contribute, but also to take into account and understand the possible co-effects (synergies and trade-offs). Such an appraisal of systemic effects gives insight into whether a multiplicity of actors and actions improves or worsens overall coherence and the integrity of the 2030 Agenda. Using tools to understand synergies and trade-offs within a larger landscape of variegated actions could provide transparency about the most urgent trade-offs. Arguably, providing transparency is one of the stronger assets of the current Pre-2020 Climate Action and Partnerships for SDGs platforms. But mere transparency is not enough to address incoherence. Even using a very simple representation of frequencies of sustainability actions across the 17 SDGs on the Partnerships for SDGs platform reveals a vast underrepresentation of non-state and subnational actions addressing SDG 10 (Reduced inequalities). The problem with current frameworks and programmatic efforts that emphasise mere "visibility" and—to some extent—transparency, is that patterns of imbalanced implementation are not systematically informing, for instance, technical dialogues or the mobilisations of key actors. Subsequently, we believe it is necessary to follow up on such observations with targeted processes and dialogues to avoid trade-offs, where possible, and to make choices that can gain the consent of those most affected.

Nationally successful policy coherence cannot solely be achieved through sustainable development policies, but also through the coordination of human and institutional capacity (see Román et al. 2012). The implementation of the Paris Agreement and the 2030 Agenda is anchored nationally, respectively, through NDCs and national implementation plans. However, the two

agendas often advance in parallel, where climate is broadly assigned to environmental ministries, while the 2030 Agenda becomes the responsibility of more central institutions at the cabinet level, such as president's or prime minister's office or the planning and finance ministries (Bouyé et al. 2018). The cross-cutting nature of the 17 SDGs requires governments to break out of silos and to embrace broader participation to ensure both horizontal (across sectors) and vertical (across actors) policy coherence. The key areas in which coherence needs to be enabled for the implementation of the 2030 Agenda are: coherence between global and national goals; coherence across international agendas and processes; coherence between economic, social, and environmental policies; coherence between different sources of finance; and coherence between diverse actions of multi-actors and stakeholders (OECD 2014). These dimensions of coherence must require close coordination at all stages of policy-making, guided by adequate institutions and mechanisms. Coherent implementation requires horizontal integration through coordination among line ministries, but it should also go beyond the state level and acknowledge the potential of a polycentric reality, ensuring the activation of multiple actors, including civil society, academia, businesses, and development organisations. A number of countries have designated new coordinating bodies for the implementation of the SDGs that go beyond horizontal participation across ministries and involve regional authorities and non-governmental actors (see Breuer et al. 2018; Chan et al. 2018; Tosun and Leininger 2017). For instance, the German Sustainable Development Strategy established mechanisms that facilitate coordination between authorities at the federal, regional, and municipal levels, such as the Sustainability Network of Lord Mayors, Regional Hubs for Sustainability Strategies (RENN), and the Federal-Länder Experience Pool. Going beyond regional and local authorities, the Czech Republic facilitates consultations and dialogue and incentivises SDG implementation action through a diverse group of stakeholders, including the private sector, civil society, and sectoral experts (OECD 2018). The potential contribution to implementation towards broad sustainable development is considerable and could be better realised through the use of recent tools for multi-criteria decision-making and country-specific mapping and cost–benefit analysis.

Finally, all key areas of coherence are also relevant to development cooperation. A strong indication for the needed scale of international cooperation could be derived from the overwhelming majority of developing countries that define conditional and unconditional climate targets, whereby the former are conditional on external support, technology transfer, innovation, and international financing. Although such means of implementation have always been central to international development cooperation, emerging polycentric governance structures also change the expectation patterns of developing countries. They not only make more ambitious targets dependent on traditional development aid between countries, but they also expect other stakeholders to play a role in a variety of functions, including the leveraging and provision

of resources, services, and localised solutions. In climate governance, such shifting expectations also explain the fact that developing countries more often refer to the role of the private sector and non-state actors in their NDCs compared to those of other countries (Hsu et al. 2019). Similar anticipation of non-state contributions can be found in SDG strategies at the national level. For instance, already submitted "voluntary national reviews" have shown that some countries, such as Benin, are pursuing a procedural approach to policy integration, establishing bodies, and new procedures in order to coordinate and monitor SDG implementation. Such bodies are not only composed of governmental actors, but also international donors, civil society, businesses, and labour unions (Breuer et al. 2018; Tosun and Leininger 2017, p. 7). Interestingly, the simultaneous conditioning of policy targets and inviting state and non-state capacities could be seen as an implicit understanding of the current incoherence of sustainable development efforts in developing countries. Through a broader uptake of new tools to identify governance gaps and goal interlinkages, sources and thematic areas of incoherence could be better specified—beyond the summary formulations in NDCs and SDG-based national strategies. Similar to general national-level implementation, findings on specific implementation contexts allow for setting priorities on stimulating and leveraging transnational capacity-building for sustainable development in developing countries. A better understanding of factors that influence coherence also represents an important opportunity to improve both donor countries' and recipient countries' policies and to leverage the efforts of state and non-state actors across a polycentric governance landscape.

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