

Hierarchization

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Unlike government-dominated top-down decision-making in a domestic context, world politics works largely through interstate bargaining between sovereign states. There are few instances of intended or planned hierarchy where actors or institutions are vertically stacked above one another. Hierarchy is actively and deliberately avoided. For example, it has been repeatedly emphasized that a new international agreement ‘should not undermine existing relevant legal instruments and frameworks and relevant global, regional and sectoral bodies’ (Scanlon 2018), and that no rights and obligations of the parties under any other international agreement shall be affected by it (Axelrod 2011). What we observe as a consequence are regime complexes, or ‘non-hierarchical but loosely coupled systems of institutions’ (Keohane and Victor 2011: 8). The advent of new types of actors, norms and institutions in world politics over the past two decades has caused further entanglement of global institutions (Biermann and Pattberg 2008). In fact, the very notion of global governance is premised on the assumption that various actors and institutions exist side by side and that hierarchy among them is absent or difficult to discern (Dingwerth and Pattberg 2006).

A key consequence of such a non-hierarchical architecture of global governance has been a degree of what is often perceived as disorder. For example, in the absence of a supreme court in global governance, international courts and tribunals decide on cases without necessarily following precedents. Similarly, international organizations (Alvarez 2005) and conferences of the parties to multilateral environmental agreements adopt decisions that may point in different directions (Wiersema 2009). It is often left undetermined which rule or norm prevails in the case of inconsistencies. An obvious concern here is the likely decrease in the effectiveness of global governance architectures; but there are also important political consequences that go beyond concerns of effectiveness. For instance, powerful states could take advantage of ‘chaotic’ situations to exert their power and gain more leverage over global governance outcomes at the expense of the less

powerful (Paulus 2005; Benvenisti and Downs 2007). The general view is that the lack of hierarchical relations between international norms, actors and global governance institutions has created conditions of complexity, uncertainty and unpredictability, with important implications for global justice, stability, continuity and order.

To address these concerns, the hierarchization of the global institutional architecture is often proposed in both academic writing and in policy proposals. Proponents of hierarchization seek to improve stability, predictability and durability of governance processes and outcomes by ordering relationships between various actors, norms and institutions in the same way as hierarchization in domestic jurisdictions is seen to foster order. An early example of the deliberate pursuit of hierarchy within the international order came at the end of the Second World War. Governments were then determined ‘to save succeeding generations from the scourge of war’ (UN Charter, preamble) and established the United Nations with a mandate to maintain international peace and security. The UN Security Council was created with far-reaching powers and the UN Charter given primacy over all other international agreements (Article 103; see Liivoja 2008). These reforms after 1945 can be seen as having had some positive impact on establishing order through one central mechanism: the hierarchization of global governance.

Hierarchy is lacking, however, in many other domains, and earth system governance is a prime example. Here, the governance architecture and the laws that underpin it have been characterized by their weak constitutional nature (Bodansky 2009; Kotzé 2016), their lack of an overarching goal (Kim and Bosselmann 2013) and the absence of a central governing authority (Biermann 2000; Vijge 2013). Policy entrepreneurs continue to formulate proposals that centre on improving hierarchization. These include proposals for establishing a sustainability *Grundnorm* in global governance (Kim and Bosselmann 2013); a global environmental constitution (Kotzé 2012; Bosselmann 2015); a law of the atmosphere (Najam 2000; Sand and Wiener 2016); an international environmental court (Murphy 1999; Pedersen 2012; Lehmen 2015); a world environment organization (Palmer 1992; Biermann 2000); and most recently a Global Pact for the Environment (Aguila and Viñuales 2019). If realized, these reform measures have the potential to radically transform the architecture of earth system governance.

In this chapter, we review recent research on hierarchization in earth system governance and the political and legal processes that establish, maintain and legitimize it. We begin by conceptualizing both hierarchy and hierarchization. We present three mutually non-exclusive forms of hierarchization – systematization, centralization and prioritization – all involving different actors and rationales, mechanisms and strategies, while achieving different purposes with varying

governance outcomes. We illustrate our argument with empirical examples including the proposed Global Pact for the Environment, the proposal to establish a world environment organization and the Sustainable Development Goals. We conclude with an assessment of the benefits and drawbacks of hierarchization as an approach to some of the challenges inherent in earth system governance, and offer suggestions for future research.

Conceptualization

We define *hierarchy* in global governance as a vertically nested structure in which actors and institutions at a lower rank are bound or otherwise compelled to obey, respond to, or contribute to higher-order norms and objectives. The place in a hierarchy corresponds to relative status or authority. A prominent example is the hierarchy of norms in international law, and specifically the debate revolving around constitutionalizing international law (Kotzé 2015), where *erga omnes* obligations (applicable to all) or even peremptory norms such as *jus cogens* (binding on all) are generally considered as superior to other types of norms (Shelton 2006). In this chapter, however, we go beyond such a legalistic conception and use the concept of hierarchy rather broadly. Reflecting the past decade's research on global governance, we conceptualize hierarchy also to include other recently emerging forms of nested structures between new types of actors as well as norms and institutions. Our conceptualization includes, for example, the practice of global goal-setting that identifies a certain set of non-binding, yet influential, global priorities among many possible priorities. We do not equate hierarchy with government, although we note that a vision of a single global constitutional polity with a global legislature, executive and judiciary is arguably the most extreme example of hierarchy in the international system.

Generally speaking, a hierarchy can emerge in a system through intended and unintended processes, and it can emerge top-down by central decisions or bottom-up by informal association. A bottom-up hierarchy may emerge in a growing network through preferential attachment, wherein system elements become differentiated hierarchically according to varying degrees of power or influence. For example, Google would assume a top position in the hierarchy of the Internet, but it does not stand formally 'above' others. It is just another website but with many links that make it a central hub.

However, the type of hierarchy most observers discuss in earth system governance is more formal with defined hierarchical relationships among elements and processes in a governance architecture. Here, *hierarchization* is a deliberate process driven by a normative and governance aim to transform a horizontal global governance architecture into one with a clearer hierarchy that resembles more

accurately the governance systems of domestic states. This could be done through creating new institutions above or below an existing institution or rearranging existing institutions hierarchically, or by creating superior and inferior norms. Hierarchization in earth system governance is therefore broadly about institutionalizing a hierarchy among norms, institutions, actors and governance priorities. It is different from the clustering or coordination of treaties, for example through the Biodiversity Liaison Group, which does not create a stable and persistent hierarchy.

Once hierarchization is seen as a planned process, we need to ask about the purpose behind any quest for more hierarchy in global governance. We derive at least three rationales, or desired outcomes, of hierarchization from the literature.

(1) First, hierarchization is sought to address complex coordination problems. According to organizational studies, hierarchy supports a division of labour, which in turn leads to enhanced coordination and cooperation as well as reduced conflict (Halevy, Chou and Galinsky 2011). Similarly, in earth system governance, hierarchization has been suggested to fill the coordination gaps of fragmented or differentiated institutions (Zelli and van Asselt 2013; Zürn and Faude 2013) and improve policy integration (Biermann, Davies and van der Grijp 2009). In line with polycentric governance theory, coordination without hierarchy is also possible (Ostrom 2010; Jordan et al. 2018), and self-organized coordination seems in fact to be the dominant mode of coordination among multilateral environmental agreements (Kim and Bosselmann 2013). And yet, in the absence of hierarchical steering of individual institutions from above, there is uncertainty over how they will collectively behave. Hierarchization could reduce such uncertainty by providing clear direction to coordination.

(2) Second, hierarchization may improve institutional fit, or the fit between institutional arrangements and the defining features of the problems they address (Young 2002; Galaz et al. 2008). A horizontal governance architecture is not well aligned with, for example, the ‘hierarchy of [planetary] boundaries’, where climate change and biosphere integrity serve as ‘core planetary boundaries through which the other boundaries operate’ (Steffen et al. 2015: 8). More fundamentally, the finite biophysical carrying capacity of the earth has not been formally recognized and reflected in the global governance architecture (Kim and Bosselmann 2015). This is so despite a scientific consensus that ‘sustainability must be conceptualized as a hierarchy of considerations, with the biophysical limits of the Earth setting the ultimate boundaries within which social and economic goals must be achieved’ (Fischer et al. 2007: 621; see also Costanza et al. 2015; Kim and Bosselmann 2015). Hierarchization could establish an order within the architecture of earth system governance that matches better with earth system science.

(3) Third, and with specific reference to the juridical dimensions of global governance, hierarchization may address normative conflicts that arise between

different levels and actors of global governance (domestic, subregional, regional and international); between different treaty regimes that often focus on specific issues such as biodiversity conservation and trade in endangered species, but that have a common goal of environmental protection; and between the different types of international law norms such as international conventions, custom, general principles of law and judicial decisions (Vidmar 2012).

Hierarchization is often not a predictable, linear process. Hierarchy is more often than not a result of a power struggle between various actors advocating and promoting different objectives, processes, norms and institutions. Some powerful actors may have a vested interest in the status quo and resist attempts at creating a hierarchy in the architecture of earth system governance. The resistance by some powerful industrialized countries against creating a stronger top-down climate treaty and accompanying institutional enforcement regime is a case in point. On the other hand, other powerful actors may also propose hierarchization. France and Germany, for example, have actively pushed for an upgrade of the United Nations Environment Programme into a fully fledged international organization, and France has played the lead role in driving and promoting the initiative for a Global Pact for the Environment.

Because of the political nature of hierarchization, it is important to critically scrutinize the process and identify whose goals, norms or institutions have come out on top of the hierarchy, and why. For example, while the 17 Sustainable Development Goals cover a broad range of issues, many major issues have not been included, such as ozone depletion and population growth. Why, then, were these specific 17 goals and 169 targets identified as global priorities, and not others? Are the needs and interests of all stakeholders fairly represented in this set of global goals? Relatedly, to what extent do concerns about lack of democracy and representation arise in global governance? There may also be questions about the possible imposition of norms from some countries on others. This concern relates to the literature on the fragmentation of international law and governance where institutional diversity is seen as a necessary reflection of societal diversity (Koskenniemi and Leino 2002; Fischer-Lescano and Teubner 2004; see also Chapter 8).

Research Findings

Hierarchization can take many different forms. We identify at least three mutually non-exclusive categories of hierarchization in global governance, namely, systematization, centralization, and prioritization.

(1) *Systematization*. Arranging actors and institutions according to an organized system could lead to a nested hierarchy. Although not all systems are hierarchically

organized, a key component of a system is its overarching goal or purpose that trumps other auxiliary objectives of individual system elements. Systematization could therefore involve establishing and defining an ultimate objective of a governance architecture and make it binding on all international regimes and institutions therein (Kim and Bosselmann 2013). Without such systematization of relationships, an architecture risks being a random collection of actors and institutions without a common goal. Here, secondary rules about how global governance processes work (e.g., rules of procedure), as opposed to primary rules of conduct, play a critical role (Bodansky 2006). In a nested hierarchy, the relationships between norms at the same level are still not explicitly defined, but higher-order norms may serve as adjudicators to reconcile any potential conflicts between norms at a lower level (Vidmar 2012).

(2) *Centralization*. Hierarchy can also be created through centralization of a governance architecture. A key example here is creating a new supranational authority with more centralized decision-making, norm creation, dispute resolution and enforcement authority. Such a hierarchical intergovernmental organization could be equipped with majority decision-making (Biermann 2014). Existing examples include the United Nations Security Council and the World Trade Organization, which have increased the degree of centralization, hence hierarchical order, in a decentralized institutional landscape. The proposal for a Deliberative Global Citizens' Assembly is expected to bring about a similar effect (Dryzek, Bächtiger and Milewicz 2011). The notion of centralization should, however, not be mistaken for efforts aimed at creating a monocentric architecture with a single authority. There are typically multiple governing authorities in a global governance architecture, which together lead to a polycentric system with 'multiple and overlapping cores of control hierarchies' (Duit et al. 2010: 366). But centralization would aim to introduce a hierarchy in the architecture by promoting one decision-making authority over other authorities.

(3) *Prioritization*. Prioritization is another form of hierarchization. It refers to ordering of issues or interests according to their relative (perceived) importance. For example, some argue that environmental concerns need to be given 'principled priority' over others (Lafferty and Hovden 2003). In the legal domain, prioritization is evident in proposals to elevate ecological care as the most important fundamental objective of the state and of its constitution (Steinberg 1998). Prioritization could also include the practice of global goal-setting through which certain issues are identified as global priorities (Biermann, Kanie and Kim 2017). Examples include the Paris Agreement's two-degrees Celsius target (Morseletto, Biermann and Pattberg 2017) as well as the Sustainable Development Goals (Kanie and Biermann 2017). Some commentators have gone further and called for ranking of global priorities by recognizing, for example, poverty reduction and planetary

stability as ‘twin priorities’ (Griggs et al. 2013) or ‘a prosperous, high quality of life that is equitably shared and sustainable’ as an overarching goal for the Sustainable Development Goals (Costanza et al. 2015: 13). As global priorities, these goals and targets are expected to have some degree of hierarchical steering effect on earth system governance (Chapter 12).

We now discuss these three categories of hierarchization with examples specifically focusing on developments over the last decade.

Systematization

The idea of hierarchization through systematization goes to the heart of a long-standing debate in public international law: to what extent is there a normative hierarchy in which some norms are superior and others inferior, and how can such norms be identified? The background to this question derives from concerns about conflicts between horizontal norms (e.g., between norms in a trade agreement and an environmental treaty). In case of such a conflict, how do we know which norm prevails? The context also derives from attempts to raise the relative normative status of some environmental norms above others, specifically with a view to creating higher-order ecological norms that would be binding on states regardless of their consent (Kotzé 2015).

Normative hierarchy refers to ‘the relationship between and ordering of legal norms according to their superiority in terms of their objectives, importance of their content as well as the universal acceptance of their superiority’ (Kotzé and Muzangaza 2018: 282–3). In domestic legal systems, the determination of such a hierarchy would usually lead to the main source of authority: the constitution. In international law, however, where it is far more difficult to discern a constitutional structure, rules, sources and procedures emanating from different sectors are deemed equivalent (Broude and Shany 2011). While no formal hierarchy between international legal norms thus exists, ‘something like an informal hierarchy’ may still be present (International Law Commission 2006: para. 327). This informal international normative hierarchy presumes the existence of an international value system, in which some norms are of such fundamental importance or necessity that they are considered to be superior (De Wet and Vidmar 2012).

In this hierarchy, three types of norms are usually identified (Shelton 2006). First, there are peremptory norms from which no derogation is possible, known as *jus cogens*. Such norms are *erga omnes*, that is, owed to the entire international community. There is some agreement that norms such as the prohibition of genocide and the prohibition of torture could be regarded *jus cogens* norms. Yet, there is still no consensus on the full list of norms that qualify as *jus cogens*, nor is there agreement on how to identify such norms in the first place,

notwithstanding ongoing efforts (e.g., International Law Commission 2019). This uncertainty extends to international environmental norms. Yet, some have proposed to consider including some fundamental norms in earth system governance as *jus cogens*, for instance the wrongful emission of ozone-depleting substances (Biermann 2014).

The second type of norms consists of norms contained in treaties that claim superiority by subjugating other norms. While such ‘conflict (or savings) clauses’ are found in many agreements, only one treaty claims superiority over any other treaty: the United Nations Charter, which in its Article 103 provides that the Charter shall prevail in the event of a conflict with any other international agreement. In earth system governance, conflict clauses are more limited in scope, usually ceding priority to the rights and obligations arising from existing treaties (Wolfrum and Matz 2003). There are exceptions, however, for instance with Article 311.3 of the United Nations Convention on the Law of the Sea claiming priority over existing and future agreements, making it akin to a peremptory norm.

A third type of norms that suggests the presence of a normative hierarchy is what is called soft law. Though the notion of soft law remains contested (Klabbers 1996), soft law is usually considered to include instruments that are non-legally binding or that may be non-enforceable (Boyle 1999). Soft law instruments have been a hallmark of international environmental governance, with declarations, action plans, guidelines and recommendations playing a key role in the progressive development of international environmental law (Friedrich 2013). While the influence of soft law norms should therefore not be underestimated (see also Chapter 12), given their non-legally binding nature, they can be considered inferior to other norms.

Any systematization that leads to a normative hierarchy raises an all-important question: what is the basis for the systematic ordering and the resulting hierarchy? Rephrased in Hartian terms, what is the underlying ‘rule of recognition’ (Hart 1994: 94); or in Kelsenian terms, what is the *Grundnorm* (Kelsen 1960)? As discussed below, these questions have also arisen – and preliminary answers to them have been put forward – in the context of earth system governance.

The discussion on the existence of superior and inferior norms has found resonance in the emerging debate on global environmental constitutionalism (Bosselmann 2015; Kotzé 2016). The promise of global environmental constitutionalism is that elevating norms to protect the environment to global ‘constitutional’ norms might result in more effective legal protection. Throughout the years, states and non-state actors have made efforts to try and compile a set of international environmental norms that could resemble an international environmental constitution. Some examples are the 1972 Stockholm Declaration on the Human Environment, the 1982 World Charter for Nature, and the ongoing Earth Charter

initiative (Kotzé 2019a). However, it is widely accepted that international environmental law still lacks a strong constitutional order (Bodansky 2009).

Against this background, it is worth highlighting the latest effort to elevate a set of principles to a higher level: the proposed Global Pact for the Environment. Driven by France, the proposed Pact is the result of an exercise involving legal experts from all over the globe to formulate a set of legally binding international environmental principles (Aguila and Viñuales 2019). The proposed Pact includes a variety of well-established principles, such as the prevention, precaution and polluter-pays principles. In addition, the Pact also puts forward several emerging principles (e.g., the principles of resilience and non-regression), and suggests the inclusion in a legally binding instrument of principles that had hitherto only been included in soft law instruments (e.g., the right to an ecologically sound environment) (Knox 2019).

The proposed Pact's objectives seem to be three-pronged, namely (1) to be the first globally binding framework instrument of the entire body of international environmental law; (2) to entrench all major principles of international environmental law in one document; and (3) to develop progressively the law to provide a globally recognized right to live in an ecologically sound environment, with associated procedural environmental rights. As reflected in these objectives, the Global Pact shows the ambition and potential to strengthen the constitutional order in international environmental law.

Following the Pact proposal, a United Nations General Assembly resolution called for the discussion of 'possible gaps in international environmental law', which may ultimately lead to 'the convening of an intergovernmental conference to adopt an international instrument' (United Nations General Assembly 2018: para. 2). The ensuing intergovernmental discussions – in which the idea for a Global Pact met with significant resistance, meaning that its adoption is unlikely to take place before 2022 (Earth Negotiations Bulletin 2019) – have highlighted some concerns that will be informative for any attempt to create a normative hierarchy through systematization (Kotzé 2019b).

Among the concerns expressed about these developments, we note two that are particularly relevant to our discussion. First, in line with the discussion above, the inclusion and exclusion of certain norms in a Global Pact will likely be contested. Some will view the inclusion of some norms as unwarranted, for instance because the legal status of the norm may be in dispute. Others will lament the exclusion of other norms (Kotzé and French 2018; Kotzé 2019a). Second, while some principles may be widely accepted, their formulation may differ depending on the issue at hand. Any attempt at harmonizing and codifying these principles may both be resisted and have the unintended side-effect of creating uncertainty in the subfields of international environmental governance (Biniaz 2017).

But global environmental constitutionalism, and the hierarchy in international environmental law it may bring about, do not need to come about only through the adoption of a binding global environmental constitution. Other, perhaps even more viable and realistically achievable, alternatives exist. One such alternative is the formal adoption of a global right to a healthy environment (possibly outside the Global Pact process described above) (Knox 2019). To date, the United Nations General Assembly, which is considered the final arbiter on the formal creation and inclusion of international human rights into the body of international law, has not yet seen its way open to proclaiming a binding international right to a healthy environment (Alston 1984). Having the social and morally justified objective of environmental protection recognized as a right internationally, could be a critically important means to establishing regulatory priorities in earth system governance through hierarchization (Kotzé 2018); although admittedly, the two concerns raised immediately above will likely also be an issue in this instance.

Centralization

We now discuss attempts to partially centralize global governance architectures as a strategy for achieving more effective outcomes.

Our focus is, first, on the role of centralization in global networks of organizations. Here, authority and, eventually, organizational hierarchy can arise from an organization's ability to steer other intergovernmental organizations, to create or influence norms through drafting and coordinating multilateral agreements, to resolve disputes among member states or to enforce member states' compliance with certain rules. In a situation of such high organizational hierarchy, even a single intergovernmental organization can steer or dominate a governance architecture. The World Trade Organization at the centre of international trade governance is a case in point (Young 2008; Charnovitz 2012).

In contrast to trade governance, however, the architecture of earth system governance is characterized by a largely non-hierarchical coexistence of multiple intergovernmental organizations with overlapping mandates. Within this architecture, no single organization has the authority to steer other intergovernmental organizations or multilateral agreements (Biermann 2014). In the 1960s, environmental concerns led to first calls for the establishment of authoritative intergovernmental institutions for the environment, which would effectively increase the hierarchization of global governance in this area. In 1972, however, governments could only agree on establishing a United Nations Environment Programme, instead of an autonomous United Nations specialized agency that would rank higher in the United Nations hierarchy (Ivanova 2007; Linnér and Selin 2013; Vijge 2013). Though the United Nations Environment Programme has the mandate

to coordinate environmental activities at the global level, it has long lacked legal authority and resources to effectively execute this mandate (Zelli and van Asselt 2013; Biermann 2014). Debates around the reform of the earth system governance architecture continued after 1972 and led to the establishment of a few weak institutions to coordinate environmental activities, such as the now-defunct Commission on Sustainable Development in 1992 and the Environmental Management Group in 1999 (Meyer-Ohlendorf and Knigge 2007). The establishment of additional non-hierarchical ‘centres’ of decision-making within a continuing decentralized or diffused architecture might have contributed to, rather than reduced, the horizontal nature of the architecture of earth system governance (Andresen 2007; Hoare and Tarasofsky 2007; Vijge 2013).

This has led to calls for a strengthened decentralized network of organizations (see, e.g., Najam 2003; Oberthür and Gehring 2004; Haas 2007; Meadowcroft 2007) as well as for enhanced coordination across multilateral environmental agreements (Von Moltke 2005; Selin 2010). Proposals that go a step further towards a more substantial reform of the architecture of earth system governance typically aim to centralize authority within one overarching intergovernmental organization. We discuss two categories of proposals that would constitute different degrees of centralization (for categorizations, see Biermann 2000; Lodefalk and Whalley 2002; Biermann and Bauer 2005; Biermann, Davies and van der Grijp 2009).

Some of the most prominent reform proposals entail an upgrade of the United Nations Environment Programme from a subsidiary body to a specialized agency, often referred to as a United Nations Environment Organization. Such an upgrade would increase the organization’s authority by providing it with its own general assembly, universal membership, a broadened mandate, centralized legislative authority, an independent budget and an overall increase in political weight within the United Nations system (Biermann 2000; Biermann and Bauer 2005). However, this organizational upgrade would centralize authority within earth system governance only to a certain extent, since an upgrade of the United Nations Environment Programme does not entail a transfer of power from or the integration of existing intergovernmental organizations. This means that a United Nations Environment Organization would not necessarily have more authority than existing intergovernmental organizations of the United Nations, with environmental mandates, such as the World Health Organization or the Food and Agriculture Organization.

A category of reform proposals that would entail a much higher degree of centralization revolves around the establishment of a supranational agency that can steer other intergovernmental organizations in relation to their environmental or sustainable development-related mandates and activities. Such an organization would be situated high in the United Nations hierarchy, comparable for instance to

the United Nations Security Council. It could arise from merging and subsuming existing United Nations agencies, possibly including the United Nations Environment Programme, and incorporate the currently independent secretaries of multilateral environmental agreements. Such an organization might also have enforcement powers over member states in regulating compliance with environmental standards, thereby following the model of, and being a counterweight to, the World Trade Organization (discussed in Biermann 2000; Lodefalk and Whalley 2002; Biermann and Bauer 2005; Kanie 2007).

Some proposals in the wider domain of sustainable development referred to a Sustainable Development Board or Council that could merge organizations such as the Commission on Sustainable Development and have authority over a wide range of organizations and institutions. Since such an entity would cut across various domains of global governance, it could potentially have much more authority than an organization within the environmental domain alone. Though the above proposals for a centralization of authority received some traction among member states, United Nations representatives and even high-level representatives from the World Trade Organization, these proposals ultimately never got very far.

Much attention has been paid instead to the recent replacement of the Commission on Sustainable Development with the High-level Political Forum, which spearheaded the formation of the Sustainable Development Goals. This Forum is mandated to enhance coordination of the sustainable development agenda within the United Nations system; but it has limited authority and resources. This has given rise to scholarly debates around orchestration, a governance strategy that stands in stark contrast with centralization, since it involves ‘soft’ modes of power exerted through intermediary organizations that guide and support actions (Chapter 11). Yet, the effectiveness of the Forum as an orchestrator is yet to be evaluated.

In sum, none of the far-reaching reform proposals of the last 40 years have been implemented, even though some progress in that direction has been made. In explaining why proposals for centralization of the earth system governance architecture have never been realized, it is important to note that many actors within this architecture have an interest in maintaining the status quo. Some powerful member states, such as China and the United States, are sceptical of, and often even opposed to, centralization proposals (Najam 2005). Many member states are wary of an organization that could become as powerful as the World Trade Organization, which could enforce compliance with environmental regulations and hence encroach on their sovereignty (Young 2008). This can explain why, as Ivanova and Roy (2007: 50) argue, member states ‘deliberately create weak and underfunded international organizations with overlapping and even conflicting mandates’. Also, intergovernmental organizations and secretariats of multilateral environmental agreements have an interest in maintaining their authority and

mandates and are therefore often not prepared to defer to a hierarchical organization for their (overlapping) environmental activities (Vijge 2013; see also Biermann 2001; Charnovitz 2012).

Even though a strong centralization of earth system governance through authoritative supranational institutions has not taken place, the latest reform efforts did result in enhanced levels of authority for the United Nations Environment Programme. The United Nations Conference on Sustainable Development in 2012 (known also as the Rio+20 conference) resulted in the United Nations Environment Programme adopting some key features of a specialized agency while maintaining the status of a subsidiary body. The United Nations Environment Programme acquired an increased budget and mandate, and, most importantly, universal membership with the creation of its United Nations Environment Assembly, thereby enhancing its formal authority among member states and intergovernmental organizations (Ivanova 2013). The effects of the United Nations Environment Programme's increased authority have not yet been thoroughly studied in the literature, but this reform seems to have muted, temporarily at least, the debates around the further centralization of the earth system governance architecture.

Prioritization

We now turn to prioritization as a strategy for further hierarchization within architectures of earth system governance. We focus here on global goal-setting, that is, the agreement on internationally agreed non-legally binding policy objectives that are time-bound, measurable and aspirational in nature, as discussed in more detail by Vijge and colleagues in Chapter 12 of this volume. Yet, while the focus of Vijge and colleagues is on global goal-setting as a governance mechanism, we are rather interested here in hierarchies among goals and between goals and non-goals, and how this affects the structure and effectiveness of governance architectures.

Generally speaking, global goals are selected through a goal-setting process in which stakeholders consider multiple issues of global significance and ultimately agree on a relatively small number of goals. These global goals broadly reflect *priorities* of the international community. For example, Young (2017: 33) explains that the 'whole point of goal setting is to single out a small number (sometimes just one) of concerns and to accord them priority in the allocation of scarce resources, including staff time and political capital', among competing objectives. Goal-setting therefore establishes a hierarchy of priorities, which can be instrumental as a means of galvanizing attention and mobilizing resources to make a sustained push to achieve measurable results within a fixed time frame (Young 2017).

Goal hierarchy in global governance then refers to the hierarchy of priorities between issues covered by a certain set of global goals as opposed to those that did not become part of the goal set. Although goal hierarchy is a relatively recent concept in global governance research, such goal hierarchies are not new. Multiple goal hierarchies have existed in global governance, some of which date back to the 1960s (Fukuda-Parr 2014), including the seven ‘major goals for the survival, protection and development of children’ adopted in 1991. Other examples of goal hierarchies are ‘global environmental goals’ that are derived from multilateral environmental agreements and the decisions of their governing bodies, some of which date back to the 1800s (Mitchell 2003).¹ Some of these goals satisfy our conceptualization of global goals, including the Paris Agreement’s two-degrees global temperature objective (Morseletto, Biermann and Pattberg 2017).

Goal hierarchy in global governance has features that are distinct from other types of hierarchies discussed earlier in this chapter. For example, goal hierarchy is relatively flexible because global goals reflect priorities at the time of negotiation and have a predetermined expiry date. Furthermore, goal hierarchy is different from normative hierarchy as global goals are not ‘superior’ to other non-goals in a normative sense, but policy problems they address are rather considered more urgent than others. For example, the protection of the ozone layer is not selected among the targets of the Sustainable Development Goals, while it was part of the Millennium Development Goals. This development does not reflect or affect the status of the norm to protect the ozone layer in international law. However, the omission indicates that the issue is no longer a priority that requires urgent attention, since the ozone layer is predicted to recover by mid-century.

Goal-setting now constitutes an established global governance strategy (Biermann, Kanie and Kim 2017; Kanie and Bierman 2017). Analysts have highlighted that global goals may have the potential to transform our societies (Hajer et al. 2015; Stevens and Kanie 2016). However, we know little about when and how global priorities affect change. The literature so far suggests at least two key roles performed by global goal-setting, namely mobilization and orchestration. First, global goals help mobilize financial and other resources (Sachs 2015), especially from non-traditional financial sources such as business, venture capital and sovereign wealth funds (Mawdsley 2018), by offering a strong signal of the direction of policy in the medium to long term. Second, global goals serve as tools for orchestrating or aligning sectoral international institutions and organizations towards achieving the common objective of sustainable development (Kim 2016; Underdal and Kim 2017; Stevens 2018). Similarly, as higher-order priorities,

¹ The United Nations Information Portal on Multilateral Environmental Agreements (InforMEA) lists 289 such global environmental goals.

global goals may help resolve conflicts or manage trade-offs between lower-ranked objectives, such as priorities identified at the target level in the Sustainable Development Goals (Kim 2016).

Not all global goals, however, exert the same level of steering effects. There are many possible explanations for such variation, among which is the degree of goal hierarchy or prioritization. The strength of prioritization depends partially on the attributes of global goals in question, namely their content and intensity on what needs to be done and to what degree (Latham and Locke 1991). Following this logic, Underdal and Kim (2017) argue that the effectiveness of global goals in enhancing the overall performance of global governance depends on (a) the degree of agreement on a small and manageable set of goals; (b) the degree to which goals provide clear guidance for both agents and principals; and (c) the degree to which goals enhance the willingness and ability of agents to work effectively together to achieve the goals set for them. Global goals meet these conditions to varying extents, and this variation accounts for varying degrees of goal hierarchy they establish. Not all of the Sustainable Development Goals are deemed to fully satisfy the conditions, and as a result, some of the goals may provide ‘scant guidance for prioritizing scarce resources’ (Underdal and Kim 2017: 242).

We now turn to hierarchization among goals. While global goals establish a hierarchy of priorities in global governance, we observe that in almost all cases, global goals are not hierarchically differentiated among themselves. The lack of hierarchy within a goal framework is not necessarily a result of all goals being equally important, but rather because of the political nature of the goal-setting process. Young (2017), for example, observes that when setting priorities involves a relatively large number of self-interested actors, there is a danger that the group will end up with too many goals or individual goals will be incompatible or even contradictory. The Sustainable Development Goals is a case in point, where priority setting has led to ‘competition for priority attention and conflict over the allocation of scarce resources’ (Young 2017: 46). This non-hierarchical nature of the goal framework itself poses a challenge of managing trade-offs between competing priorities (Nilsson, Griggs and Visbeck 2016; Stafford-Smith et al. 2016). As a potential solution to this challenge, some that creating a hierarchy within a goal set by adopting a single (or sometimes twin) overarching priority of priorities is necessary to address trade-offs between goals (Griggs et al. 2013; Costanza et al. 2015; Kim 2016).

Conclusions and Future Directions

When compared to the other reform strategies discussed elsewhere in this book, hierarchization is the most far-reaching, and inevitably the most controversial,

policy response to structural complexities of global governance. Yet, the proliferation of various ‘building blocks’ of the global governance architecture such as international institutions and norms (?) has continued to fuel a long-standing debate on structural transformation through creating a formal hierarchy.

This reform debate has been particularly heated in certain domains that suffer from the lack of hierarchy, including earth system governance. The architecture of earth system governance has often been compared with that of global trade governance or global ocean governance, which are arguably more hierarchical. As we have attempted to show, however, there are some recent signs of hierarchization in earth system governance. These include the upgrading of the Governing Council of the United Nations Environment Programme into the United Nations Environment Assembly in 2012, the inclusion of key environmental goals as part of the Sustainable Development Goals framework in 2015 and the possibility of adopting a Global Pact for the Environment.

The three key types of hierarchy – systematization, centralization and prioritization – perform different functions and have varying effects on the performance of global environmental governance. For example, higher-order norms may serve as adjudicators to reconcile potential conflicts between norms at a lower level. A central organization could improve coordination between over 1,000 international treaties and organizations. Priority goals may mobilize and steer action in certain directions.

The hierarchies are complementary. In earth system governance, for example, any serious attempt at strengthening organizational hierarchy has faced severe resistance. Evidently, proposals for a fully fledged international organization have not so far garnered sufficient political support. Yet, the possibility of a stronger normative hierarchy through global environmental constitutionalism is looming on the horizon. At the same time, global environmental goals such as the Paris Agreement’s two-degrees objective are being increasingly used as a way of prioritization. Based on our analysis of and experience with other more hierarchical global governance systems, it is reasonable to expect that a stronger hierarchy in earth system governance will lead to mostly positive outcomes.

But there are also drawbacks of hierarchization as an approach to some of the challenges inherent in global governance. A key drawback is its rigidity; it is difficult to create a hierarchy and to subsequently modify it when necessary. Actors with vested interests in the current non-hierarchical global governance architecture would resist any serious attempt at disturbing the status quo for a new or different hierarchical order. Furthermore, hierarchy is relatively inflexible and it sets a path that is not easily amenable to change. For example, the United Nations Charter has largely set the course of the United Nations system and it has never been amended, even though the world has changed drastically since 1945.

This could potentially be a problem for addressing environmental problems that are in constant flux, and require a more flexible approach.

Despite these contestations, hierarchization in our view will remain an important policy response to the increasing level of complexity in global governance. More research is warranted to understand causes and effects of hierarchy and hierarchization in earth system governance. Some of the key research questions remaining to be examined are as follows. What triggers certain forms of hierarchization? What explains variations in the level of hierarchy across different global governance architectures? What are the key consequences on the functioning of international institutions as well as global governance as a whole? In this chapter, we sought to contribute towards addressing these questions by offering a clearer conceptualization of hierarchy and hierarchization in global governance. Yet, more empirical and theoretical research in this area is still urgently needed.

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