IVM Institute for Environmental Studies

Fragmentation of Global Environmental Governance Architectures

A Literature Review

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Summary

This working paper was written as part of the first phase of the Coping with Fragmentation Project (CONNECT), a four year research project that aims to advance the understanding of the increasing fragmentation of global governance architectures across a number of policy domains, explain and analyze its causes and consequences and suggest policy responses. The project is hosted by the Department of Environmental Policy Analysis (EPA), Institute for Environmental Studies (IVM) of the VU University Amsterdam and is also part of Amsterdam Global Change Institute (AGCI). CONNECT aims to establish an international research network on fragmentation and regime complexes over the next years. CONNECT is endorsed by the IDHP Earth System Governance Project.

As the issue of fragmentation of global environmental governance moved to the centre of debate on governance performance and effectiveness in addressing environmental problems, it attracted scholars from both international law and political science. Each of the disciplines have provided a set of valuable insights into the cases of fragmentation based on distinct analytical approaches and models. However, there is a clear lack of consensus in the literature on conceptualization and various typologies of fragmentation, its causes and consequences as well as views on management approaches. Accordingly, this paper reviews and maps this burgeoning body of research with the aim to contribute to these debates by offering a structured literature review on the various conceptualizations of fragmentation of global governance, identify common analytical themes and touch upon possibilities for integrated research.

As this literature review paper illustrates, the concept of fragmentation has evolved from various legal debates on strengthening the overall international system of law and ensuring legal certainty to resembling the literature on global environmental governance in the context of today's transformations of world politics. Furthermore, we conclude that the concept of fragmentation within the framework of global governance architecture appears as a promising lens where each of the different perspectives within international law and political science could theoretically and methodologically merge. Moreover, when considering common analytical problems that each of the disciplines addresses, namely mapping and measuring the degree of fragmentation, examining its causes and consequences and management approaches, one can conclude that the different accounts of these analytical problems are essentially not conflictive, but instead complementary to each other. Therefore, one would need to employ a whole spectrum of perspectives, approaches and tools in order to address these four analytical themes associated with the fragmentation of global governance and accordingly propose concrete management and policy options for increasing the overall institutional performance in terms of sustainable development.

1   Introduction

Ever since the 1972 Stockholm Conference on the Human Environment, through the 1992 Earth Summit and Agenda 21 and until the highly anticipated Rio+20 conference on sustainable development held in 2012, the question of how to address the challenges pertaining to global environmental change has been at the core of negotiations. However, despite more than 1000 environmental treaties that have been developed over the last 40 years, anthropogenic factors are still the major drivers of global environmental change. Scientists argue that if the human-induced pressures on the environment continue in the same pace, it would trigger abrupt or irreversible environmental change with catastrophic consequences for human well-being (Rockström et al., 2009; Steffen et al., 2005). According to a recent scientific assessment, such developments require fundamental reorientation and reconstruction of national and international institutions toward more effective and legitimate earth system governance[1] and planetary stewardship (Biermann et al., 2012). In other words, questions on how to reform and evolve global institutions responsible for ensuring sustainable development in an effective and legitimate way are at the heart of debates in academic research as well as in policy processes and negotiations.

However, it is highly problematic that the specific and the overall effectiveness of emerging mechanisms of global environmental governance remains poorly understood (Biermann and Pattberg, 2008). Most research on global governance either stays confined to exploring intensive single-case studies of the effectiveness and performance of a single and distinct institution to solve particular governance challenges or on the theoretical accounts of the overall phenomena. Only recently have scholars began to investigate more systematically the middle level, that is the overarching system of institutions and novel governance mechanisms in particular areas of world politics that we define as governance architecture.[2] More precisely, based on the work of Biermann and colleagues (2009) we define architecture as the overarching system of public and private regulations and decision-making procedures – that is organizations, regimes and other forms of principles, norms, regulations and decision making processes- that are valid or active in a given issue area of world politics.

The CONNECT project focuses on one aspect of global governance architecture that is increasingly moving to the centre of debates on governance performance and effectiveness in addressing environmental problems - the increased fragmentation of global governance architecture in distinct issue areas of world politics. Today, we observe a trend towards policy domains that are marked by a patchwork of international and transnational institutions that are different in their character (organizations, regimes, and implicit norms), their constituencies (public, non-profit,

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[1]   Earth system governance is a core challenge of the international Earth System Governance Project and is defined as "the interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (from local to global) that are set up to steer societies towards preventing, mitigating, and adapting to global and environmental change and, in particular, earth system transformation, within the normative context of sustainable development" (F.Biermann et al., 2010). For more information of the Earth System Governance Project, visit www.earthsystemgovernance.org.

[2]   The analytical problem of architecture is one of the five core analytical problems of the Earth System Governance Project. It includes questions relating to the emergence, design and effectiveness of governance systems as well as the overall integration of global, regional, national and local governance (F.Biermann et al., 2010).

for-profit), their spatial scope (from bilateral to global), their subject matter (from specific policy fields to universal concerns) (Biermann et al., 2009), as well as actor-networks and their underlying discursive formations. Such developments led to fundamental transformations of world politics where fragmentation becomes a necessary structural characteristic and quality of global governance architectures in and beyond the environmental domain (Zelli and van Asselt, 2012). Therefore, we conceive of such situations as fragmented global governance architecture. The concept of fragmentation of global governance architecture explores the overall institutional setting in which distinct institutions exist and interact instead of merely exploring the dyadic interlinkages between different institutions (e.g. between CBD and TRIPS under WTO) and policy domains (e.g. environment-trade linkages) (Biermann et al., 2009).

The environmental governance architecture of distinct issue areas is a prime example of fragmentation since not only are the environmental arrangements located at the intersection of many other arrangements including trade, public health, human rights, and poverty eradication, but also the very framing of issues involving human-environment interaction is changing (Young, 2008). For example, in the case of climate governance, its architecture appears as highly fragmented. It is characterized by a combination of international and transnational institutions operating at different scales that are not always connected to the overarching climate convention and the Kyoto Protocol (e.g. the Asia-Pacific Partnership on Clean Development and Climate, the Methane to Markets Partnership, the Carbon Disclosure Project, etc.), then by different types of norms (e.g. those that are addressing the climate issues through consumption-based accounting to those that use market mechanisms to pursue environmental goals or mainstream climate change issues into sustainable development); moreover it is marked with multiplicity of actors such as private for profit, private for non-profit or public-private initiatives and their actor-constellations, as well as with different discursive formations of climate change issue (e.g. an environmental degradation problem, a development issue, a security issue, etc.) (Harris and Symons, 2013; Vlassopoulos, 2012; F. Biermann et al., 2010). In the issue area of energy governance, one can observe the same phenomena occurring. It is marked by a plethora of institutions operating at different scales (e.g. UN-Energy, the International Renewable Energy Agency (IRENA), the International Partnership on Energy Efficiency Cooperation (IPEEC), the Energy Charter Treaty (ECT), G8, the IEA, etc.), with different norms (e.g. energy efficiency, renewables, nuclear power, etc.), different actor-constellations and discursive formations (e.g. energy as part of risk discourse, energy as a question of national security, etc) (Colgan et al., 2012; Fernández Carril et al., 2013; Karlsson-Vinkhuyzen, 2010).

Accordingly, the issue of fragmentation attracted scholars from both international law and political science where each of the disciplines based on distinct analytical approaches and models have provided a set of valuable insights into the cases of fragmentation as well as distinct management approaches evolving over time. However, there is a clear lack of consensus in the literature on conceptualization and various typologies of fragmentation, its causes and consequences as well as views on management approaches. Accordingly, this paper reviews and maps the burgeoning body of research on the concept of fragmentation of global environmental governance within the studies of international environmental law and world politics, synthesizes various theoretical and empirical accounts on its causes and consequences and examines various proposed management options. The primary aim is to contribute to these debates by offering a structured literature review on the various conceptualizations of fragmentation of global governance, identify common analytical themes and touch upon possibilities for integrated research. The literature review is

conducted as part of the first phase of the broader CONNECT project, which aims to address these analytical themes more systematically and subsequently bridge research gaps based on the integration of research from the international law and political science perspectives.

This literature review is guided by the methodological tools developed by Arksey and O'Malley (2005) and is conducted in three phases within the overall iterative process of searching and synthesis. The initial phase attempts to map the evolution of the conceptual accounts of the issue of fragmentation of global environmental governance in the existing literature within the disciplines of international law and political science. Considering that the scope of research is limited to the fragmentation of global governance, theoretical accounts addressing vertical fragmentation below the international level, such as polycentric or multilevel governance, are not integrated in the review; instead the aim is to address those accounts that could be applicable to any given level of horizontal governance. The authors, however, recognize such possible limitations. Secondly, as distinct conceptual accounts of the issue of fragmentation were found to address common analytical themes from different perspectives, the second phase of the literature review was induced. The second phase identifies these common analytical themes that are subsequently explored in more detail. Finally, avenues for further integrated research are discussed. Therefore, the paper is structured according to the common analytical themes identified during the process of literature review on the concept of fragmentation of global environmental governance. In the first part, we present distinct conceptualizations of fragmentation within these two disciplines. In the second part, we synthesize various theoretical and empirical accounts on mapping and measuring various types and degrees of fragmentation, its causes and consequences and finally management approaches.

2   The conceptual evolution of fragmentation

2.1   International law perspectives

Much of what is considered today under the concept of fragmentation has evolved out of earlier debates on the effectiveness and possibility of strengthening the overall system of international law ever since the mid-nineteenth century (Martineau, 2009). International law scholars particularly focused on examining overlaps among treaties by utilizing the concept of *treaty congestions* (Brown Weiss, 1993; Hicks, 1998). More recently, besides examining the proliferation of treaties, legal debates moved to include discussions of normative conflicts and legal techniques for solving them under the banner of *conflicts* (Gerstetter et al., 2007; Techera and Klein, 2011) or *fragmentation* (Boyd, 2010; Commission, 2006; Pauwelyn, 2002; Van Asselt, 2011) in international law. Finally, in light of recognizing the incremental transformations of world politics, the interest in *legal pluralism* appeared as a conceptual tool for framing fragmentation (Michaels, 2009; Burke-White, 2003).

The concept of treaty congestion was primarily used to describe the problems of treaty conflicts, treaty obligation and objective conflicts, and procedural conflicts as a direct result of the proliferation of international treaties (Hicks, 1998). The assumption is that the problem of treaty congestion is expected to increase as the number of multilateral environmental treaties continues to expand in an uncoordinated fashion and without strengthening the effectiveness of existing ones (Anton, 2012). Moreover, two major problems associated with treaty congestion have been identified: namely the lack of states' capacity and of international system to monitor, implement and comply with the plethora of new obligations; and secondly, the proliferation of uncoordinated international environmental law resulting in uncoordinated obligations, overlapping norms, and outright duplication (Brown Weiss, 1993). The case studies of treaty congestion include exploring the conflicts between the Convention on International Trade in Endangered Species (CITES) and the International Tropical Timber Agreement (ITTA) that arose over the divergent normative frameworks for the management of mahogany (e.g. sustainable development vs. conservation) (Hicks, 1998).

Moreover, much of the international law literature focuses on examining the relationship among treaties in order to identify conflicts of normative frameworks and propose legal techniques for solving them. For example, considering the relationship between the International Treaty on Plant Generic Resources (ITPGRFA) on the one hand and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), the International Union for the Protection of New Varieties of Plants (UPOV) and the Convention on Biodiversity (CBD) on the other, Gerstetter and colleagues (2007) examined potential legal conflicts that may arise among them and proposed the implementation of interpretative rules based on the identification of common goals as a conflict resolution technique. Others explored institutional overlaps in treaties regulating the management of sharks arguing that conflicts of interest between conservation efforts on one side and those involved in trade and commercial exploitation of marine species on another is the main cause of conflicts and thus it is crucial to strengthen the coherence of legal strategies (Techera and Klein, 2011). Furthermore, the concept of fragmentation of international law started to have a particular resonance when the International Law Commission (ILC) included it in its long term programme in 2000, established a special Study Group in 2002 and finally

released a special report on fragmentation in 2006. The ILC report provides an extensive overview of debates raised with increased fragmentation of international law and offers international layers a toolbox for addressing such challenges. It includes the analysis of potential conflicts that may arise among diverging norms and regimes at different levels in the context of the transforming international law system, as well as techniques for resolving these conflicts (Commission, 2006). The report goes on to emphasise the flaws in traditional state-centric international law in regulating such emerging arrangements and concludes that fragmentation should be viewed as constitutive of international law with both negative and positive aspects (ibid.).

However, in face of emerging complexity associated with multi-actor interactions across different levels, plurality of normative orders, environmental law and regulation have gone through the process of transformation and the traditional understandings of the Westphalian state system have become highly debatable. Moreover, much of the international law scholars began to recognize that there is a considerable mismatch between the scale of highly complex and multidimensional environmental problems and the existing legal and political order and authority to steer the world community toward a solution (Singh, 2011; Van Asselt, 2011);. For example, it is argued that the UN collaborative initiative on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD)[3] has significantly challenged the traditional legal conception of forests and their relationship to state sovereignty by putting an economic value on forests and assigning them an important function as carbon sinks in the systems that are global in scale, thus reconceptualising legal rights and obligations (Boyd, 2010). Moreover, it is argued that the recent Copenhagen Accord and Cancun Agreement show the limitations of the existing United Nations system as a leader in climate governance (Boyd, 2010). In conclusion, many argue that the difficulties facing international climate policy resulted from an unrealistic embrace of top-down approaches to the problem and lack of consideration for the realities of a plural, fragmented international legal and political order (Boyd, 2010; Singh, 2011; Van Asselt, 2011).

Accordingly, much of the studies of global environmental law start to resemble the literature on global environmental governance and the interest in legal pluralism emerged as a conceptual tool for framing fragmentation. Burke-White (2003) argues that the emerging international legal system is best described as pluralist, meaning that it is neither fully fragmented nor completely unitary. Instead it includes a range of different and equally legitimate norms prolongated by different set of actors within the context of a universal system (ibid.). Central to legal pluralism is the conception of the world as constituted by a diversity of legal and non-legal normative orders that coexist with the laws and norms of particular states thus challenging a perceived monopoly of the state in making and administering law (Michaels, 2009). Accordingly, recognizing pluralism and fragmentation as the basis for the studies on effectiveness and legitimacy of global environmental law implies moving away from a top-down, comprehensive global governance as a normative standard of effective governance to understanding the complexity and multitude of actors, institutions, laws and values and the complexity of environmental problems (Burke-White, 2003).

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3   The UN-REDD Programme, launched in 2008, is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. [URL: http://www.un-redd.org/AboutREDD/tabid/102614/Default.aspx, assessed 13. 06. 2013]

2.2   Political science perspectives

Recognizing the shift from government to governance, political science and International Relations scholars employ various concepts and theoretical approaches in order to provide relational and explanatory accounts of the various underlying variables of fragmentation, such as power and problem structure, norm or interest conflicts, actor constellations or discourses in which these institutions are embedded. Moreover, from the 1970s onwards fragmentation of institutional arrangements was the focus of scholarly debates in political science as well, however under different conceptual and typological accounts, including interlocking institutions in the 1970s, followed by more recent studies in the mid-1990s onwards on *institutional interlinkages, overlaps or interplay* (Aggarwal, 1998; Oberthür and Stokke, 2011; Young, 2002) and recently followed by the concept of *regime complex* (Keohane and Victor, 2010; Raustiala and Victor, 2004), most of which stem from the disciplines of International Relations and institutional economics.

Current research on institutional interplay or interaction is largely based on the debates surrounding the work on institutional effectiveness that emerged in the 1990s. Whereas early research on institutional effectiveness focused on examining the impact of individual institution on their own governance domain, institutional interplay examines the effects that one institution has on the development or performance of another institution and their overlapping areas of governance (Oberthür and Stokke, 2011; Young, 2002). Institutional interplay can occur both horizontally (e.g. interactions between trade regimes and environmental regimes operating at the international level) and vertically (e.g. interactions between local systems of land tenure and national regulatory systems dealing with matters of land use) (Young, 2002). Empirical analysis of institutional interplay has focused on examining a dyadic interaction among the institutions governing different domains, including trade-environment interaction (Gehring, 2011; Sampson and Chambers, 2002), such as between the climate change regime and the trade regime (Charnovitz, 2003); bio safety and trade (Young et al., 2008); between the World Health Organization (WHO) and the climate change regime (Van Asselt et al., 2005); between the climate change regime and the International Maritime Organization (IMO) (Oberthür, 2006); institutional interaction within one regime such as international climate change regime (Oberthür, 2001); and finally the institutional interaction within particular geographic area or region such as the North Sea, the Arctic, the Antarctic or the Coral Triangle.

Raustiala and Victor (2004) expanded the research focus arguing that the proliferation of institutions and its costs and benefits can be conceptualized as a regime complex. A regime complex is "an array of partially overlapping and non-hierarchical institutions governing a particular issue-area that are marked by the existence of several partly overlapping and non-hierarchical legal agreements created and maintained in distinct flora with participation of different actors" (Raustiala and Victor, 2004, p.279). Moreover, Keohane and Victor (2010) advanced the concept of regime complex and introduced a continuum where on one extreme there are fully integrated institutions operating through comprehensive, hierarchical rules and on the other there are highly fragmented institutions with no identifiable core and weak linkages between regime elements. Sitting in between is "a wide range that includes nested (semi hierarchical) regimes with identifiable cores and non-hierarchical but loosely coupled systems of institutions" (Keohane and Victor, 2010, p.4).

This line of research has provided valuable insights into the cases of institutional and normative fragmentation among treaties and other emerging modes of governance based on distinct analytical approaches and models. However comparative, empirical

and theory driven analysis of institutional overlaps from the overall institutional setting is considerably underemployed. Finally, in light of recognizing the complexity of environmental problems and emerging new modes of governance, scholars aimed at integrating both legal and political perspectives in efforts to explain and assess implications of the fragmentation of global environmental governance, and *the fragmentation of global environmental governance architectures* appeared as the latest interdisciplinary concept (Biermann et al., 2009).

The concept of global governance architectures is broader than the concept of international regimes as it allows for the study of both synergy and conflict between different regimes and institutional arrangements, and the norms and principles in which these interactions are embedded (F. Biermann et al., 2010). Yet, it is narrower than the concept of order since it is more suitable for examining distinct issue areas of global governance (ibid.). Finally, the concept of fragmentation within the framework of global governance architectures is broader than the concept of institutional interlinkages, overlaps, or interplay since it explores the overall institutional setting in which distinct institutions exist and interact instead of merely exploring the interlinkages between different institutions (e.g. between CBD and TRIPS under WTO) and policy domains (e.g. environment-trade linkages) (Biermann et al., 2009). The global governance architectures of a given issue area encompasses different organizations, regimes, and other forms of principles, norms, regulations, and procedures addressing other issues beside the main subject area (Zelli, 2011). An important contribution of the concept of governance architectures is that it allows for the comparative analysis of different degrees and types of fragmentation in different issue areas as many policy domains are not regulated or dominated by a single international regime, but are instead marked by arrangements that are different in their character (organizations, regimes, and implicit norms), their constitutiencies (public or private), spatial scope (from bilateral to global) and subject matter from specific policy fields to universal concerns).

Fragmentation is used as a relative concept, as all global governance architectures are fragmented to some degree and consists of distinct parts that are hardly ever fully interlinked and integrated (Biermann et al., 2009). Non-fragmented, "universal" architectures are theoretically conceivable as opposite of fragmentation. The concept of architectures and fragmentation is considered to be value-free in a sense that neither pre-existing order nor normative standards leading to a particular order are part of the assumption. On the other hand, architectures arose in a decentralized and hardly planned manner during the processes of institutionalization without a necessary existence of 'architects'. Third, empirical research on fragmentation of global governance architectures depends on the perceived scale of the problem.

3   Common analytical problems

Based on our discussion of the current fragmentation literature, we have identified four common analytical problems that are the subject of the coming sections. First, we present various attempts to map and measure the degree of fragmentation. Secondly, we examine various theoretical accounts explaining the causes of fragmentation, while in the third section we present arguments about the consequences of fragmentation. Fourth and finally, various approaches for managing fragmentation are identified.

3.1   Mapping different types and degrees of fragmentation

As a discussion on conceptualizing different types and degrees of fragmentation emerged in an effort to assess which type or degree of fragmentation promises higher institutional performance, scholars attempted to either deductively or inductively come up with different taxonomies of fragmentation. Accordingly, in this chapter, we will first present various conceptualizations of different taxonomies of fragmentation, and secondly discuss various attempts to empirically map fragmentation and subsequently measure its degree.

Much of the foundational work in mapping and measuring the degree of fragmentation has been made in the context of institutional interaction at an international level. In his groundbreaking writings on institutional interactions at the international level, Young (1996) introduced a typology of four types of institutional linkages, called embedded, nested, clustered and overlapping institutions. He observed that issue-specific regimes are often embedded in overarching institutional arrangements with exclusive authority and sovereignty over decision making and membership (e.g. the 1973 Agreement on Conservation of Polar Bears, the Antarctic Treaty System). The second type considers linkages where smaller institutional arrangements are nested into broader institutional frameworks dealing with the same issue area but are narrower in scope (e.g. nesting of Asia-Pacific Economic Cooperation under the General Agreement on Tariffs and Trade (GATT) umbrella). Thirdly, clustering occurs when several specific arrangements form more generic framework based on a common concern for a problem issue (e.g. the Law of the Sea). Finally, of particular significance to research on fragmentation is a fourth type, namely overlapping linkages where individual arrangements formed independently of each other intersect on a de facto basis thus having a significant and often but not always unintended impact on each other (e.g. WTO and MEAs) (Young, 1996, p. 7).

Taking a different approach, based on concepts such as organizational learning, legitimacy and utilitarian cost-benefit analysis, Oberthür and Stokke (2011) distinguish between three types of institutional interplay: ideational, normative and utilitarian. Ideational interplay relates to "process of learning" where the substantive and operational rules of one institution serve as models for those negotiating another regime. Normative interplay refers to situations where substantive and operational norms of one institution either contradict or validate those of another institution, while utilitarian interplay relates to situations where decision taken within one institution alter the costs and benefits of options available in another.

Drawing upon the work of Young (1996) and Oberthür and Stokke (2011), various other scholars introduced their own typologies of linkages with minor variations. Scott (2011), for example, introduced embedded (when regimes operate within one realm, e.g. public international law), overlapping or functional, behavioural/cognitive

(institutional learning) and nested. Alter and Meunier (2009) considered institutional linkages as only nested, partially overlapping and parallel, while Aggarwal (2005) considered them as nested, horizontal, overlapping and independent.

The different taxonomies for institutional interaction have helped to map interaction between institutional arrangements, however, only recently has the literature focused on measuring the degree of fragmentation. Within global environmental governance architectures, Biermann and colleagues (2009) offer a typology of different degrees of fragmentation they describe as synergistic, cooperative, and conflictive fragmentation. The degree of fragmentation is determined by three indicators including institutional integration, norm conflict and actor constellations. Synergistic situations occur when there is one core institution in which other institutions are closely integrated; core norms are integrated; and all relevant actors support the same institution. Cooperative situations occur when core institutions are closely integrated with other institutions; core norms are not in conflict; and some actors remain outside the main institutions, however, they maintain cooperation. Conflictive situations occur when there are different and largely unrelated institutions; core norms are in conflict; and major actors support different institutions (Biermann et al., 2009).

Moreover, as scholars recognized that the literature on different types of institutional linkages stayed confined in the efforts to define various taxonomies of linkages whereas more empirically driven analysis that would also include novel mechanisms of governance is missing, various scholars moved to include discussions on firstly mapping institutional fragmentation and subsequently measuring its degree or recognizing various patterns that would emerge from the data. Keohane and Victor (2010) introduced the continuum ranging from a fully integrated regulatory systems with comprehensive, hierarchical rules at one end to fragmented arrangements with no identifiable core and weak or nonexistent linkages at other end. In between lie "nested regimes with identifiable cores and non-hierarchical but loosely-coupled systems of institutions" with some sort of connections but without overall architecture, they refer to as regime complex (Keohane and Victor, 2010, p. 4). Based on a case study of the climate regime complex, their attempts resulted in a map presented in Figure 3.1. Their mapping shows the fragmented nature of the climate regime complex, however it remains crude and lends itself to much interpretation in terms of where to draw the boundaries and to what degree the regime complex is fragmented.
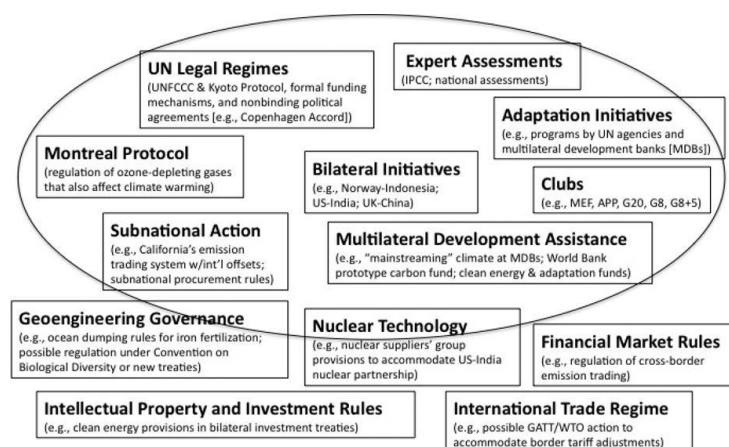

Figure 3.1   The International Regime Complex for managing Climate Change Regime
            Complex. Source (Keohane and Victor, 2010)

Finally, while the regime complex approach and the institutional interplay literature predominately focus on examining the international level of governance and formal legally binding rules and regulations, emerging transnational level of the governance and informal norms and soft law are rarely recognized (Abbott, 2011). Accordingly, in efforts to include emerging modes of governance, namely the transnational regulatory space such as voluntary norms and standard setting arrangements, Abbott and Snidal (2009) introduced the governance triangle. It offers empirical analysis of the emergence and distribution of such schemes, and later on it allows for theoretical analysis of the strengths and weaknesses of different structures (ibid.). Based on the participation of three key actors, namely states, firms and NGOs, and the possible combinations of actor participation they mapped various arrangements that emerged in transnational climate change regime (Figure 3.2) (Abbott, 2011).
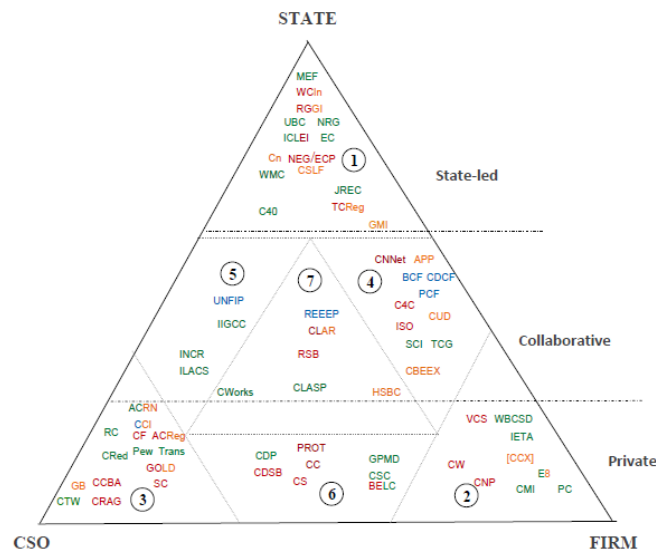

Figure 2

The Transnational Climate Change Governance Triangle

Standards & Commitments   Operational
Information & Networking   Financing

Figure 3.2   The Transnational Climate Change Regime Complex. Source (Abbott, 2011).

In a similar attempt to map the transnational level of global climate architectures, Bulkley and colleagues have gathered a database with 60 initiatives focusing on transnational climate governance (2012). These initiatives epitomize the emerging phenomenon of actors other than national governments that engage in global environmental governance and presents an additional dimension to the institutional interplay and fragmentation debate. Bulkley and colleagues have managed to shed light on the structure, functions and types of transnational governance initiatives active in climate change. It remains however to be seen how they interact with the more formal, international level and governments, as well as with international organizations.

The past 15 years of scholarship on linkages has provided much insight into the types of institutional interaction and the literature "remains littered with taxonomies" (Selin and VanDeveer, 2003). Focus has also shifted from dyadic relations between source and target institutions, to regime complexes and architectures, and slowly connections are being made between interlinkages between international and transnational levels. Baby-steps have even been taken towards determining the degree of fragmentation in

global governance architectures in an issue area. Much work is still needed to determine degrees of fragmentation in global governance architectures in order to enable comparative studies to be made between issue areas, for example climate change and biodiversity. In the next section, the mapping is left behind to make place for possible reasons and causes of fragmentation.

3.2   Causes of fragmentation

After presenting different approaches to map and categorize interlinkages, and measure degrees of fragmentation, in global environmental governance, this next section explores the causes of fragmentation. To explain the fragmentation of global governance, scholars have come to different conclusions on why fragmentation occurs. The literature can be divided into three segments by invoking the three contemporary mainstream approaches in International Relations (IR): neo-realism, neo-liberal institutionalism and social constructivism. The three traditions complement each other by focusing on different explanatory variables, namely the role of power, interest and knowledge, in efforts to explain the nature of increased fragmentation of global governance.

According to neo-realism, the structure of the international system, characterized with a lack of common power or central authority to enforce rules and maintain order in the system, shapes state behaviour (Waltz, 1979). Here, power is defined as the combined capabilities of a state, which positions a state in the international system and in turn shapes its behaviour (ibid.). In an anarchical world, international politics is composed of sovereign nation-states who motivated by rivalry seek to increase their power in order to fulfil their interests, which are to survive (O'neill 2009, Weber, 2009). Accordingly, states would never give up their power to a world government and therefore the lasting cooperation is very unlike to stay, whereas only if the most powerful states, the Hegemons, are willing to act, is cooperation possible (ibid.). One can observe that today there is an increasing body of research that utilized neo-realism as a theoretical lens in the efforts to explain fragmentation.

Looking at global energy governance, Karlsson-Vinkhuyzen argues that the multiplication of initiatives outside the UN-channels is the result of normative and institutional vacuum on energy within the UN (2010). The vacuum has been created by states' unwillingness to engage in substantial global energy governance at the UN-level due to energy's profile as an national security instead of collective security issue (Karlsson-Vinkhuyzen, 2010). In a similar vein de Coninck and Bäckstrand (2011), when discussing the global Carbon Capture and Storage (CSS) governance, explain the gradual transfer of information-provision from the Intergovernmental Panel for Climate Change (IPCC) the International Energy Agency, by looking at power configurations. The IEA is, according to the authors, more in line with the interest and under control by industrialized states with large stake in CCS technologies and dependent on fossil fuels (de Coninck and Bäckstrand, 2011). National interest is also the central theme for states to decide whether to take action or not. Harris (2009, p. 968), in his review of the US role in international environmental and climate policy negotiations, argues that "...the United States seeks to maintain its sovereignty and retain its ability to act unilaterally. It resists mandates from international organizations, and it is sceptical of following what it sees as the potential decrees of international bureaucrats". In the same line, much of the literature on "leaders and laggards" in environmental policy making resembles realist account of world politics where the role of leader countries in setting regulatory trends in the emerging policy field is seen as dominant (Christoph, 2012). What Karlsson-Vinkhuizen, de Coninck and Bäckstrand, Harris, and Christoph

describe are realist perspectives on international affairs where cooperation towards solving common governance problems, such as energy, climate change or biodiversity, is difficult since states pursue self-interest and are wary of others making relative gains and free-ride, and institutions are merely created to support the already powerful states. While institutions probably matter more in environmental governance than realists would lead us to believe, it is plausible to think that the fragmentation and the strength of global environmental efforts are, at least partly, the result of the interests of powerful states (Falkner, 2005).

While realists certainly bring important insights to the table, interest-based accounts such as neo-liberal institutionalism have been more popular. It is a tradition rich in theoretical accounts ranging from regime theory to global governance theory, and the notion of regime complexes, where the concept of fragmentation has particular resonance. Neo-liberal institutionalism implies that all states in world politics have only one meaningful identity, that of a-priori self-interested states, but institutions matter when shaping state interests since there is a functional need for international regimes in a world characterized by collective action problems (Hopf, 1998). Under this scenario, cooperation is achieved when states can work together to realize joint gains, and when institutions are set up so they can monitor compliance, increase transparency, reduce the transaction costs of cooperation, and prevent free-riding (O'Neill 2009). Institutionalists assign non-state actors, such as the United Nations, or NGOs important roles in fostering such transparency and enhancing cooperative agreements (ibid.).

Young emphasizes two drivers of institutional interaction, namely 'functional' and 'political' (Young, 2002). First, functional interdependencies occur when the problems or activities that two or more institutions address are linked in bio geophysical or socioeconomic terms (e.g. UNFCCC, ozone regimes, CBD); secondly, they may arise through *political or strategic linkages* when actors strategically decide to forge connections between two or more institutions in order to reach individual or collective goals (e.g. Joint funding mechanisms such as GEF (ibid.). In a sense, building on Young's argument, causes of fragmentation can be both the unintended result of linkages between issue areas and their governing institutions, or, it could be the intended result of strategizing actors. In line with the second way of reasoning and in an effort to explain the causes of institutional change and innovation in the context of global energy governance over the past 40 years, Colgan and colleagues (2012) examined the strategies that actors employ to create institutional change. Basing their assumption on the notion of politics as reflecting the interests of actors with the highest degree of power resources, Colgan and his colleagues argue that change occurs when dissatisfaction in the status quo of regime complex is high. Yet large structural change only happens when *powerful* actors desire change. Other dissatisfied actors, however, can engage in so-called "forum shopping" which is later described in this article (Colgan et al., 2012). They also explain institutional change as path-dependent, driven by sporadic events and dissatisfaction among major actors with similar interests creating coalitions in support of action for change (ibid.). Path-dependency means that new or adapted institutions reflects the previous arrangements mainly because the transaction costs are kept low by retaining some organizational routines (ibid.). In the same line, Keohane and Victor (2010) argue that in order to exercise bargaining power states can form "clubs" based on the shared set of features, such as interests, power resources, information and beliefs. Moreover, Keohane and Victor (2010) argue that there is a linear correlation between the diversity of problem structure and the diversity of institutions that aim to tackle the problem. In addition they argue that comprehensive integrated regimes occur when: a) powerful

actors share the same or similar interests and b) their rule systems are institutionalized in a single institution. On contrary, fragmented regimes occur when several narrow regimes coexist in the same issue area without clear hierarchy or core and yet they are loosely coupled/linked system of institutions. In these situations, conflicts among actors are likely to occur (Keohane and Victor, 2010).

Moving towards less state-centred perspectives on the structure of global governance, scholars also recognize that there is a growing web of actors beyond the state, such as informal networks of governments, intergovernmental organizations, NGOs and business with overlapping spheres of authority (Biermann and Pattberg, 2008; Rosenau and Czempiel, 1992). Recently, discussions moved to include the role of transnational governance in the policy making process (Ford, 2010). The emergence of new actor constellations and institutions is a large cause of fragmentation, however, the exact pathways telling us the reasons why, are less well understood. Visseren-Hamkers and Glasbergen argue that private regulation, such as partnerships, is a result of gaps in governance that need to be filled (2007). Pattberg also points at macro-level reasons for example changes in world politics such as dissipation of authority among state and non-state actors, and micro-level reasons such as problem structure and the capacities of individual organizations (2005).

Finally, more constructivist and "knowledge-based" perspectives offer ideas stressing the cognitive and normative aspects of problem-formation (Betsill and Bulkeley, 2004). In the fragmentation debate, the emergence of new actors and institutions beyond the nation state, has boosted the explanatory power of constructivism. Constructivism criticizes realist and neoliberal institutionalism "rationalist" accounts of choice assumptions, where interests of states are defined a priori and shaped by exclusive material power do not fit well in the environmental context where any claim certainties are often limited (Betsill and Bulkeley, 2004). Constructivism stresses the evolution and role of norms, discourses, identity, culture, knowledge and values, as well as the role of non-state actors, such as scientists, networks and civil society operating at different scales can have in shaping world politics. Here, interests are not pre-defined and can be shaped and formed among state and non-state actors through not only material power, but also through normative and discursive shifts or through the power of knowledge, ideas, cultures, ideology (Hopf, 1998).

While constructivist approaches have been good in explaining fragmentation as a phenomenon, they have paid less attention to understanding why it occurs. Some scholars have looked into the motivations of non-state actors to engage in transnational governance. Risse, for example, argues that the motivation depends on the type of actor. Companies and special interest groups for example have instrumental reasons such as promoting the future of the groups or lobby interest, whereas many NGOs for example, have a more altruistic idea of supporting the "international common good" (2007). That having said, there is little understanding why some norms and issues are pursued and other not by non state actors. The importance of norm entrepreneurs is for example well acknowledged (Keck and Sikkink, 1998), however, why an entrepreneur chooses one norm over another is not clear. Also Carpenter, in her analysis of advocacy networks, argues that the construction and accepting of international issues in first place – what she calls "issue emergence" – remains an understudied aspect of transnational governance (2007). Yet she mentions a few possible explanations. Based on Keck and Sikkink (1998), the first is *issue attributes* basically saying that some problems are better suited for advocacy than others. The second one is the presence of *pre-existing moral standards* around an issue. Third, the altruistic and conviction of individual leaders could also explain the emergence of a norm (Carpenter, 2007). While constructivism clearly provides an

alternative perspective on "rational" interest and power based theories, it fails to provide a convincing narrative for the emergence of fragmentation. This is probably more a problem of neglect than weak spot in the theory, but nevertheless a gap in knowledge from a theoretical perspective.

In conclusion, we find surprisingly few theories trying to explain the causes of fragmentation. Path-dependency accounts is an exception where the general line of thinking is that the size and number of institutions have increased as they try to respond to emerging problems however, due to old habits, there is little room for innovation and what is left is a patchwork of centres of authority. Actors and institutions, be they state or non-state, contribute to the fragmentation either by starting up new, competing initiatives, filling governance gaps, or actually, increasing complexity and perhaps confusion, to their own gains. Scholars focusing on the transnational explain the causes of fragmentation as symptomatic of large-scale trends such as globalization however they lack a clear theory on why some norms emerge and get picked up by policy entrepreneurs and other not. Such a theory would be needed to explain variation in causes for fragmentation. A central question for research on the causes of fragmentation is to understand to what extent actors deliberately increase fragmentation or not.

3.3   Consequences of fragmentation

In order to develop future effective architectures for global environmental governance, many of the studies reviewed in this chapter address the potential costs and benefits of fragmented governance architectures emphasizing either the value of diverse set of governance arrangements or the importance of the integrated overall architecture. Consequently, this chapter will group this body of research according to those that emphasize the disadvantages and on the other hand potential advantages of fragmented global governance.

Major debates within international law literature on the negative consequences of fragmented governance are that it may lead to regulatory and legal uncertainty (Zelli and van Asselt, 2012). Other negative outcomes associated with fragmentation include high transaction costs and duplication of efforts, as well as that it may lead to significant lack of coordination institutions, actors, sectors and levels (Benvenisti and Downs, 2007; F. Biermann et al., 2010; Zelli and van Asselt, 2012). Moreover, other argue that fragmentation of the international regulatory order resulted in an increased and steady influence of the powerful states lead by their own domestic interests thus determining the process of democratization of international institutions and negotiations (Biermann et al. 2010, Benvenisti and Downs, 2007).

Particular resonance within the literature on the negative effects of fragmentation has the concept of regime or venue shifting. Benvenisti and Downs (2007) view fragmentation as strategic action of powerful states in perpetuating their dominance at the international level through the creation of a large number of broad agreements which makes it difficult for weaker states to come to agreement on any particular issue. However, they also claim that the weaker states engage in strategic action as well in order to pursue their goals, such as turning to pre-existing policies, pursuing particular opportunities among multiplicity of arenas and finally reaching international bureaucrats and judges (ibid.). Besides the concept of regime shifting, particular emphasis is placed on the phenomenon of "forum shopping" as well. Kellow (2012, p.333) refers to forum shopping as "a strategy of selecting arenas because of the benefits conferred by institutional characteristics and using these to progress or

inhibit the development of policy initiatives". Moreover, besides viewing forums as arenas where particular actors strategically draw to in search of advantages and better chances of success, he sees forums as active actors seeking for the participation of "shoppers" in negotiations in order to build their legitimacy. He emphasizes deliberate and strategic actions of policy entrepreneurs such as reference to various agreements and commitments (ibid.). Alter and Meunier (2009) argue that such developments resulted from a changing nature of international system of governance as non-hierarchical and without a clear central decision-making body.

On the other hand, in her study on the creation of formal governance strategies for fostering cooperation and other linkages among MEAs, Scott (2011) challenges the very negative notion of the concept of fragmentation of international environmental law within the "fundamentalist" literature of international law. She shows that it is not only conflictive regulatory mandates that give rise to fragmentation, but divergent standards or the development of different managerial approaches to environmental problems as well. Moreover, considering that fragmentation can have both costs and benefits, she emphasizes that the managerial efforts should not aim at eliminating fragmentation but instead should focus on recognizing them first and later increasing/maximizing its benefits and potential while reducing risks (Scott, 2011).

International legal theorists from the neoliberal institutionalist tradition argue that fragmentation should be viewed as a gradually evolving, realistic and more effective response to globalization than centralized, hierarchical and coherent form of international legal system. In the same lane, scholars argue that fragmented legal system fits more to an increasingly networked world thus resulting in a higher share of benefits then associated costs and thus should be nurtured through informal agreements, dialogue and respect (Burke-White, 2003). Moreover, legal theorists from a post-modernist or constructivist tradition (Koskenniemi and Leino, 2002) view fragmentation and associated competing normative structures even as a more positive development and response to an increasingly transforming international system and social change. Finally, drawing from a literature on public administration Kellow (2012) argues that fragmentation, duplication, overlap, pluralism, multiple arenas and multi-level governance should be considered as a necessary and to some extent unavoidable structural characteristic of governance in so that it creates opportunities for further development of environmental policies through forum shopping, policy innovation, redundancy, consensus building and negotiations.

Finally, Abbott (2013) argues that some of the benefits relate to flexibility of the system to adapt and address emerging and dynamic problem issues across different scales, opportunities for the actors sharing similar interests and values to form productive clubs, as well as opportunities for learning and experimentation. Along the same line, Keohane and Victor (2010) emphasize the value of flexibility and adaptability of a regime complex in coping with uncertainties associated with the process of governing complex human-environment interactions. Accordingly, great deal of literature emphasized the potential of fragmented governance in diffusion of innovations and opportunities for the innovation of policies and policy instruments (Kellow, 2012), for experimentation of alternative regulatory frameworks and learning (Zelli and van Asselt 2012), diversification of actors, division of labour, transfer of functions to other institutions (F. Biermann et al., 2010) and overall lead to what is call the notion of the diffusion of innovation including policies, technologies, procedures and ideas (Biermann and Pattberg, 2008).

3.4   Managing fragmentation

While most of the approaches for managing fragmentation are essentially grounded in divergent views on the causes of fragmentation, recently it has been emphasized that the research needs to integrate normative perspectives for managing fragmentation as well. For example, Biermann and colleagues (2009) argue that the advantages of fragmented governance architecture overweight associated costs and emphasize that systems should be managed as to avoid the cases of conflictive fragmentation. On the other hand, others argue that the standard of coherence should be a criteria for assessments where the actions to increase coordination in global governance should be enacted (Keohane and Victor, 2010) as it would ensure the achievement of the same goals, or lead to increased level of transparency and trust (Falkner et al. 2010 in (Van Asselt and Zelli, 2012). Others look for ways of coordinating distinct institutions and regulatory systems (Van Asselt and Zelli, 2012). Therefore, in this chapter we will provide an outlook of the distinct approaches for managing fragmentation in the literature.

The creation of some form of an International Environmental Organization (IEO) or a World Environment Organization (WEO) resonated much of the literature where improved communication and cooperation through bridging information and decision making gaps are emphasized as a two-fold strategy for overcoming fragmentation and increasing governance effectiveness (Biermann and Bauer, 2005). The rationale behind the creation of an overarching international environmental institution lies in increased efficiency among MEAs, increased normative and procedural advantage of international environmental law to other better coordinated fields of international law and finally increased legitimacy of international law as a central component in addressing environmental problems (ibid.). The role of such an institution would be to consolidate organizational mandates, decision making and administrative structures, as well as establish stable funding sources and strengthen monitoring, enforcement and compliance mechanisms. Some argue that upgraded UNEP could fit this role, while others emphasize the important role secretariats may play in increasing coordination among MEAs through disseminating information to state parties and influencing COP decision making (ibid.). In this line, some of the legal scholars propagate for a creation of a comprehensive legal system that would increase the legitimacy of international law and use it as a central component in addressing environmental issues (Carlarne, 2008).

On the other hand, others argue that the creation of WEO or IEO would not fit the complex problem structure of the environment, but instead call for clustering, that is for grouping a number of international environmental regimes together so as to make them more efficient and effective by utilizing various tools for clustering and based on the same problem structure (Von Moltke, 2005). A number of institutions were identified that could have an important role in clustering, such as the conference of the parties, subsidiary bodies, secretariats, then tools, such as electronic clustering, purposeful use of financial incentives, communications, capacity building (ibid.). The examples of clusters would include the Conservation Cluster, the Hazardous Substances Cluster, the Marine Environment Cluster, etc. (ibid.).

Besides these concrete options based on the creation of new institutions, others developed more sophisticated models for managing fragmentation. Stokke (2011, p. 143) developed a framework for analyzing strategic interplay management decisions based on several institutional niches or governance tasks that may be employed for solving particular environmental problems within larger institutional complexes. Interplay management involves efforts to impede, trigger or shape the impacts one

institution might have on another through a strategic selection of governance tasks (Stokke 2011). These governance tasks include 1) recognition of the severity of the problem and how effective different approaches for solving it might be, 2) elaboration of behavioural norms, 3) implementation of such norms through for example funding or capacity building, 4) rule enforcement.

In exploring such alternative modes of governance, Abbott and colleagues (2012) focus on orchestration as a promising way of improving the performance of international organizations and global governance. In orchestration, one actor or a set of actors, referred to as the Orchestrator, works through a second actor, the Intermediary, to govern a third actor, the Target. In international governance organizations (IGOs) orchestration, the intermediary actors are usually NGOs, but may also involve business organizations, public-private partnerships, transgovernmental networks and other IGOs. Intermediaries have the crucial role since they possess those capabilities that IGOs lack. The targets of IGOs orchestration may be either states or private entities. It is emphasized that an orchestrator does not govern the target directly and through hierarchical modes of governance as it depends on the support provided by intermediaries and vice versa (ibid.). While intermediaries support IGOs by providing local information, technical expertise, enforcement capacity, material resources, legitimacy and direct access to resources, IGOs strengthen the governance capabilities of intermediaries as well by providing material support, such as financial and administrative assistance, or with ideational support, such as technical expertise, formal approval or political endorsement. Moreover, in order to provide their support, IGOs can steer goals and values of intermediaries in line with their own goals. Accordingly, in order to reach governance goals and regulate the behaviour of target actors, IGOs may involve in „managing states" by enlisting intermediaries to shape their behaviour in accordance with their goals, or in „bypassing states" by enlisting intermediaries to influence the conduct of private actors without state intermediation (ibid.). Thus, orchestration, as Abbott argues, serves to create and enforce common rules for the conduct of states based on the same shared goals and values and mutual support through symbiotic interaction between an orchestrator and intermediary, and in this case state and non-state actors thus constituting a multi-level governance system. However, although Abbott (2013) argues against a tightly integrated transnational regime, he does, however, recognizes potential benefits in stronger horizontal coordination within the same type of institutions at the same level and stronger vertical coordination across different types of institutions operating at different levels.

One example of IGOs orchestration is the influence UNEP has exercised over private actors to adopt the Global Reporting Initiative (GRI) by collaborating with the environmental NGO CERES (Dingwerth 2007). Another example includes the potential of the UNFCCC as an orchestrator in facilitating and coordinating the wide variety of bottom-up approaches, which would in general overcome the view of the UNFCCC as a top-down institution for implementing climate policies (Abbott and Snidal, 2010). Moreover, Abbott (2013) recently emphasized the potential role of transnational institutions and networks in improving overall governance performance. For example, he called for constructing transnational climate change regime (TCCR) as an "orchestrator" that would include private organizations, public-private partnerships (PPPs), associations of sub-state governments, transgovernmental networks of national agencies and IGOs. Through information sharing, managing and bypassing states, as well as linking organizations vertically, TCCR would reach and mobilize other actors than the state, contribute to information sharing, strengthen weak institutions and create new ones to fill governance gaps, encourage horizontal linkages and inter-

institutional cooperation, as well as build vertical linkages to support and steer lower-level institutions (Abbott, 2013).

Moreover, in international law literature it is argued that although the international law perspective cannot comprehensively address the fragmentation of global environmental governance, it can provide a useful insight when examining conflicts and exploring avenues for increasing synergies and mutual supportiveness between environmental and non-environmental treaties (Van Asselt, 2007). In addition, a special focus should be placed on recognizing how different regimes and norms could achieve synergies and reinforce each other in a non-hierarchical manner instead of merely looking at potential conflicts that may arise among them (Van Asselt, 2011; Scott, 2011; Commission, 2006). When treaties share the same concepts in their objectives, e.g. sustainable development (Rio Conventions: the UNFCCC, the CBD and UNCCD or ecosystem approach), there is a potential for cooperation. Therefore, instead of managing conflicts between regimes by enforcing treaties, international legal scholars argue for the need of the creation of governance mechanisms and tools that would increase the benefits associated with fragmentation and avoid conflicts. Some of these mechanisms, which are both legally binding but also of political and administrative nature, are the creation of institutional cooperative arrangements and formal linkages between MEAs, the memorandum of understanding, partnerships, development of joint work programmes, the creation of joint rules and institutions, meetings (Scott, 2011).

Accordingly, in the case of the post-2012 climate negotiations, when the proliferation of climate initiatives beyond the UNFCCC emerged, it is argued that the role of the UNFCCC post 2012 has to be reconsidered from thinking in terms of its centrality in climate negotiations to multiplicity of actors and plurality of governance (Van Asselt and Zelli, 2012). In case of climate change it is to redirect attention to fostering linkages between individual components of the existing global climate governance architecture, as opposed to searching for ideal governance architecture – and to provide some first ideas on how such linkages could look like at the intersection of climate change mitigation and trade policies (ibid.). Coordination could avoid the duplication of work in case of overlapping initiatives, link it to the assessment of the countries' technology needs, and keep the track of how technology transfer could contribute to the overall climate mitigation objectives. UNFCCC could increase and strengthen their previous functions, e.g. information and knowledge sharing, support technology hubs and innovation networks, capacity building and technology needs assessments, form the focal point for the provision of public funds (Van Asselt and Zelli, 2012).

4   Conclusion

Questions on how to reform and evolve global institutions responsible for ensuring sustainable development in an effective and legitimate manner are at the heart of debates in academic research as well as in policy processes and negotiations ever since the first international conference on global environmental change in 1972. However, comparative, theory driven and empirically based research on the global environmental governance from the overall institutional perspective in an important issue area of world politics that we conceive of as global governance architectures is still missing. The CONNECT project focuses on one aspect of global governance architecture that is increasingly moving to the centre of debates among the scholars of international law and political science and policy makers, the fragmentation.

As this literature review paper shows, the concept of fragmentation has evolved from various legal debates on strengthening the overall international system of law and ensuring legal certainty, to resembling more established literature on global environmental governance in the context of today's transformations of world politics. The concept of fragmentation within the framework of global governance architecture is a promising lens where each of the disciplines of international law and political science could theoretically and methodologically merge. Moreover, when considering common analytical problems that these two disciplines address under the auspices of various taxonomies of fragmentation, namely mapping and measuring the degree of fragmentation, examining its causes and consequences and management approaches, one can conclude that the different accounts of these analytical problems are essentially not conflictive, but instead complementary to each other. Therefore, one would need to employ a whole spectrum of perspectives, approaches and tools in order to address these four analytical themes associated with the fragmentation of global governance and accordingly propose concrete management and policy options for increasing the overall institutional performance in terms of sustainable development.

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