Abstract

Reducing emissions from deforestation and forest degradation (REDD+) has become a key element of the emerging post-2012 international climate agreement. While the REDD+ regime is being negotiated internationally, national level institutions and local activities are emerging to gain experience, test different approaches and involve different actor constellations. At the same time, in the private sector, many of the same actors participate in building a forestry carbon value chain, which similarly spans the local, national and international levels and recognizes the different roles of diverse actors at each level. In this study we compare the dynamics of the emergent international REDD+ regime with the construction process of the forestry carbon value chain. In particular, we aim to explore the similarities and differences of these two processes and what are the key characteristics and forces at work in each. We examine issues around scale, agency and institutional logics. Our objective is to understand whether or not these two processes are in fact analogous, but kept distinct by the different norms, discourses and behaviours of the policy and business circles. With this study, we attempt to bring into dialogue political science/IR and innovation strategy literatures, assessing multi-level governance and innovation systems approaches and uniquely comparing two processes that are bounded by different rules, norms, discourses and behaviours.
1 Introduction

Researchers and policy makers increasingly recognize the role of forests as an essential component in international efforts to understand, mitigate and adapt to climate change. Forests have to date been governed in a number of different ways, including by traditional national forestry and land-use policies, by international regimes such as the Convention on Biological Diversity, and by private forest certification schemes such as the Forest Stewardship Council (McDermott et al. 2010). This landscape of existing measures addressing forests varies considerably in mechanism and effectiveness and is quite dense.

The post-2012 UN climate negotiations have introduced a new paradigm for addressing forests by essentially putting a value on the carbon in standing forests. This emerging approach to reducing emissions from deforestation and forest degradation (REDD+) builds on existing knowledge, practices and rules and at the same time interacts with other social, economic, scientific, and environmental processes, agendas and interests. While the REDD+ negotiations take place primarily among actors in international venues, a host of processes and initiatives are occurring bottom-up and are shaping the forest carbon value chain.

This paper aims to evaluate the contributions to understanding REDD+ from two theoretical approaches – regime theory, in particular vertical institutional interplay, and innovation strategy approaches to value creation in ecosystem services markets. We sketch the broad analytic assumptions of the two approaches and provide some illustrative case material from REDD+ developments in Peru. We discuss some common analytic themes including issues of agency, scale, and institutional logics that bridge across both approaches.

2 Theoretical Frameworks

Regime theory

The fundamental organising unit of international society today remains state sovereignty; it has been reconstituted throughout history, such as in Westphalia in 1648, in Vienna in 1815 and in San Francisco in 1945. Given the undisputed interdependence among nation-states, such as through global environmental change and international trade, states have negotiated rights, rules and decision-making procedures to govern their interactions. They typically form specialised institutional arrangements covering particular issue-areas, such as nuclear proliferation, international trade and ozone layer depletion (Young 1991). These arrangements all redefine the boundaries of state sovereignty and constitute ‘international regimes’, or simply ‘regimes’.
Regimes can be defined as “social institutions that consist of agreed upon principles, norms, rules and decision-making procedures, and programs that govern the interaction of actors in specific issue areas” (Young 1997, 5-6). They are “the humanly devised constraints that shape human interaction” (North 1990, 3). According to classical regime theory, i.e. rationalist approaches based on power or interest constellations as major explanatory factors, regimes emerge either through the initiative of a leader or through interest-based, interstate bargaining, reflecting the preferences of actors or interest groups able to exercise power during processes of regime formation (Hasenclever et al. 1997; Young 1991; Keohane 1984; Krasner 1983). Much of this literature has linked regime theory with the agency of nation-states, rather than understanding regimes purely as institutions.

Yet, since the end of the Cold War, the landscape of international regimes has significantly changed while theoretical approaches have lagged in their response to these shifts. First, intergovernmental and non-state actors have made essential contributions to the formation and development of international regimes, and have formed novel private governance arrangements (Biermann and Siebenhüner 2009; Pattberg xxx). Subsequently, scholars have focused less narrowly on the state as the defining agent of international relations and regimes purely as institutions or ‘the rules of the game’. Instead, many have taken a global governance perspective that emphasises the multiplicity and diversity of state and non-state actors, the significant variation of rule-making systems and governance approaches and the multiple levels at which governance takes place (for example, Betsill and Corell 2001; Biermann and Siebenhüner 2009; Newell 2000; Keck and Sikink 1998).

Partly in reaction to this development, scholars have advanced alternative perspectives of regime theory that emphasise how ideas shape the ways in which states define their interests. These “knowledge-based” or “constructivist” approaches view international regimes as a means through which cognitive and normative aspects of the problem in question are constructed and shape the ways states perceive their interests (Hasenclever et al. 1997: 136–210). More recently, discursive perspectives have added to this diversity of novel regime theories that go beyond a (merely) nationalist approach (Arts and Buizer 2009; Schmidt 2008).

Second, international relations have been marked by a growing interdependence in a wide range of policy areas. This tendency is reflected by the steady growth in the number of international regimes whose substantial scopes have been increasingly extended beyond the ‘classical’ issues of international security and economic integration. In particular, trade and environmental domains have been subject to a heyday of institution-building in the 1990s (Chambers 2001). The resulting increase in institutional density and complexity has given rise to new challenges and conceptual responses that have come to inform the regime research agenda, including the research foci of causality, performance and design and the analytical themes of fit, interplay and scale (Young 2002; Young et al. 2008).
The concept of *fit* is closely linked to effectiveness, referring to matches or mismatches between ecosystem properties and institutional attributes (Young 2002: 55–58; Galaz et al. 2008). Misfits between institutions and biophysical or socio-ecological systems are very common, but once in place they are often difficult to rectify. Misfits occur because natural processes and social systems are highly dynamic and multilevel, entailing periods of both incremental and abrupt change as well as considerable uncertainty (Young et al. 2008: xvi).

*Interplay* describes the phenomenon of increasing material and functional overlaps between different regimes, for instance between the climate and biodiversity regimes on the issue of forest protection (Gehring and Oberthür 2008; Oberthür and Gehring 2006; Rosendal 2001; Young 1996). Institutions as the ‘rules of the game’ do not operate in a vacuum; on the contrary, the institutional space is crowded and becoming increasingly dense, resulting in linkages among them that can be embedded, clustered, nested or overlapping in character (Young 2006). They interact in potentially synergistic or conflicting ways both horizontally within the same level of governance and vertically across levels (Gehring and Oberthür 2008; Young 2006). Apart from dyadic interlinkages between two regimes, this research programme also includes more encompassing perspectives that target regime complexes or the institutional fragmentation of global governance architectures (Alter and Meunier 2009; Biermann et al. 2009; Raustiala and Victor 2004; Zelli 2011). Likewise, vertical interactions between institutional arrangements across different levels have come under scrutiny (Young 2002: 83–110).

Finally, growing institutional complexity also has implications for the issue of *scale*, especially for the transfer of propositions from one level to another (Gupta 2008; Cash et al. 2006). Cash et al. (2006) distinguishes between scale defined as “the spatial, temporal, quantitative, or analytical dimensions used to measure and study any phenomenon, and “levels” as the units of analysis that are located at different positions on a scale”. Interaction can take place within or across scales, leading to outcomes of potentially significant complexity (Cash et al. 2006). A new research agenda on policy diffusion and adoption (e.g. Busch et al. 2005) tries to address this challenge, asking *inter alia* to what extent regime norms and rules need to be contextualised in order to be fair and effective across levels.

Altogether, these new trends show that regime research has co-evolved with its very object of analysis, and still serves as a useful framework for examining regime developments. Thus, in the following sections, we show to what extent the new research programs on agency and the dimensions of fit, interplay, and scale may contribute to explaining and understanding the development of the emerging UNFCCC REDD+ mechanism. Subsequently, we choose agency and scale as two ‘points of interaction’ to compare the contributions of regime theories with those of value creation approaches.
On the other hand, we conjoin these novel perspectives with a not at all obsolete notion of classical, i.e. rationalist regime theory. We link back to the original theoretical assumptions of regime theory, which start from the premise that “international regimes are not restricted to formal state authorities, organizations and international law and, most significantly, that they are to be treated as institutions” (Vogler 2003, 26). In other words: while taking into account new forms of agency and new dimensions of regime development, we seek to explain the evolution of the REDD+ mechanism through constellations of power and interests and along three discernible stages of regime formation (Breitmeier 1997). The first is agenda building where the issue is prioritised depending on its importance for political ‘gatekeepers’ and for society as well as on the level of norm formation in support of problem solving. Second, the issue is negotiated and an agreement is formally adopted on paper. Third, the agreement is operationalised for entry into force and implementation, which may involve further negotiation of details and fine tuning of language. As we show below, this combination of a rationalist ontology with an expanded agenda provides a sensible complementation and docking points for the value creation approach with its focus on actor constellations and its distinction of institutional logics.

Innovation and value creation systems

Research and policy analysis on innovation strategy and environmental governance provide a range of analytic and conceptual tools grounded in classic open systems thinking (cybernetics; Hawley; Hoffman and Ventresca 2002; Lounsbury and Ventresca, 2003; Scott 2007; Scott and Davis 2009; and in more applied ways Chesbrough 2003, 2010; Adner 2006 on ecosystem risks). This complements research lines in business strategy and policy that move away from the positional analysis for competitive advantage of well-developed industries and well-structured markets (Porter 1985, 1996; 2001) to focus on value creation systems in nascent markets and fields of organized [global] activity (Gereffi; Norman 2001; Ramirez et al, Parolini 1999; Ventresca and Kaghan 2009). The key shift here is to focus on what some would call the genealogy of ‘value’ (Ramirez 1999) and by extension the social and institutional structures that materialize potential value in various accountings processes where the institutional rules and recognized boundaries are not yet delimited (Santos and Eisenhardt 2010; Forbes and Kirsch 2010 and on institutional rules: Suzuki 2007). This condition where boundaries are still ambiguous or under-determined, common in many emerging activity fields, point to a related process: how ‘value’ itself comes to be stabilized.
and agreed upon through commensuration processes that align across different social worlds, typically through tools and metrics that translate heterogeneous inputs into comparable units (Espeland and Stevens 1998; Espeland 2001). This approach builds from work on the organizational and economic sociology of markets as contested fields (Fligstein 1996, 2002; Carruthers and Ariovich 1994; Bourdieu 1996, 2002) shaped by social movement dynamics of incumbents and challengers. The useful linking concept here is the value chain.

In standard strategy terms, a value chain depicts the set of processes by which inputs are transformed into outputs (Porter 1985). At each moment in the value chain, the intermediate outcomes are redefined, reconfigured, and refined to input into next-stage activities that create further value. The value chain is typically presented as a linear representation of the ‘core’ activities in the value creation process. The value chain can represent the current organization of a particular firm’s value creating activities. For other purposes, the value chain can represent the industry ‘standard’ value chain, de facto a dominant design for value creation in an industry. This usage is especially important for our purposes: the value chain in this sense captures conventions, ‘industry recipes’ and institutionalized norms about how to create value (Spender, 19xx; Dobbin 1994; Porac, Wade et al, 200x; Porac, Ventresca and Mishima 2002). The incumbent value chain thus provides a starting point to imagine and implement innovations that are transformative of the value creation process: new forms of organization, new models of supplier relationships, material and social technologies that shift or disrupt conventions (Schumpeter 1946; Christensen 1997).

Current work on value constellations unpacks this cross-section approach – to recognize any incumbent value chain as de facto an incumbent ‘set’ of relationships among actors in the value creation process (Mannervik et al 2010). Viewed this way, a current value chain summarizes many component value chains – the value chain of the key suppliers, and the value chain of their suppliers, and so forth. This rendition makes visible the network features that become useful in trying to understand how the forestry carbon value process is taking shape in institutional and organizational terms. We can now describe a value creation system as some [realized] constellation of network linkages among diverse actors. With the use of

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1 Note here: commensuration argues that authority creates tools and framework which ‘force’ comparability, e.g., metrics of one kind or another. Regime theories, instead, propose that policy/action follows on epistemic community arguments, where communities of heterogeneous experts come to agree on the [ontological] status of problems and solutions. This different may be useful for us to develop in the discussion.
basic social network concepts and tools like centrality or density; strong and weak ties, and structural holes (Burt 19xx; 2003; Podolny and Page 200x), we can use a network approach to map emerging value creation processes in forestry carbon, as discussed below.

**Key analytic features of value creation system approach**

Value creation/innovation systems turns on a strong view of incumbent and 'challenger' technologies, infrastructure, and logics. In our reading, this involves the effort to specify the current or legacy arrangements, and then to contrast these with alternatives promoted by other actors, typically 'outsiders' that start from different institutional commitments, assumptions, and premises.

This requires the analyst to specify some current configuration of resources, logics, and actors. In the case of emerging regimes, these are often distributed across key jurisdictions and expertise. And so the innovation itself may realign or restructure which actors are involved, the venue(s) in which they come together, the infrastructure that supports this, and the forms of interaction and coordination. This is the basis for 'new' value creation.

The role of 'logics' is important here. The concept of 'institutional logics' focuses on systems of meaning and the associated social practices that support and reinforce those meanings (Friedland and Alford 1991). The analytic value of this concept comes from being able to compare 'across' logics that together describe which set of meanings organize activity (e.g., conceptions of value, appropriateness) in a particular field of activity. One or more logics, often anchored in different domains of activity, often contend in defining the norms of any one field; over time, one logic may prevail, several may contend, or one may dominate over others - in each case these conditions and the transitions capture features of the institutional and cultural infrastructure of 'local' action and potentially action that spans any one jurisdiction.

The debates over agency take one form in the growing literature on 'logics'. The classical Weberian root of this idea argues that all action occurs ‘in relation to’ orienting meanings, the grounding in substantive or formal rationalities. But these are not individual choices; rather these rationalities are embodied in constellations of institutions, norms, and practices. This is the basis for Friedland and Alford arguing that ‘society’ in fact comprises not a unified whole, but rather comprises multiple institutional arenas (state, family, markets, religion etc) each with its own animating logic of action. This effort to link action and broader meaning systems provides both analytic and empirical opportunities.

For our purposes, this focus on logics points us to explore the origin social worlds that are involved in shaping REDD+: which actors, which systems of meanings, which practices. In other words, the REDD+ negotiations do not emerge from nowhere, but rather represent extensions, recombinations from prior arenas of science, environmental policy, related policy
sectors, etc. What is important about the REDD+ case is how it engages with (and/or displaces) other in situ forestry governance arrangements – national policies, other private governance regimes, etc. as mentioned earlier. The focus on logics here makes it possible to argue what specific-to-REDD+ rules and norms are being developed, but in light of their legacy sources. As an analytic tool, the focus on logics also enables us to track over time which meanings systems and associated authorities and practices emerge, contend with each other, become more or less impactful. In this way, we can describe the content of the emerging REDD+ regime at various points. For regime arguments per se, the focus on logics also lets us track which configuration of norms, principles, and decision-making processes is operative as REDD+ develops – again, more of an empirical strategy.

3 The Nascent REDD+ Regime

The Earth Summit in Rio in 1992 marked the beginning of various important global environmental governance institutions. Apart from the UNFCCC, two other initiatives which focus more directly on forest protection were established after the summit – the legally binding Convention on Biological Diversity (CBD), which entered into force in 1993, and the Intergovernmental Panel on Forests, which in 2000 was succeeded by the United Nations Forum on Forests (Scholz 2004). While the UNFCCC, especially in debates on carbon sinks and the Clean Development Mechanism, predominantly address forests with regard to biomass and carbon stocks, the UN Forum on Forests and the CBD by their very mandates have gone beyond such a focus. They target the sustainable use of forests and forest protection to conserve biodiversity. In absolute terms, since their inception these two institutions have not attained their ultimate goals, i.e. reducing or avoiding deforestation and biodiversity loss. This notwithstanding, they remain chief global forums for forest protection – and their relationship to the UNFCCC on forest-related issues has not been without tensions (Kim 2004; Rosendal 2001).

The UNFCCC, on the other hand, has put emphasis on forests during and after the negotiation of the 1997 Kyoto Protocol. This notwithstanding, the role of forestry in the climate regime remained vague and unresolved. In its listing of policies and measures suggested to parties to meet their emission reduction commitments, the protocol names the “protection and enhancement of sinks and reservoirs of greenhouse gases” and, more specifically, the “promotion of sustainable forest management practices, afforestation and reforestation” (Art. 2[i]). Thus, prior to COP 13 in December 2007, forests and other types of biomass were regarded first of all in the context of greenhouse gas inventories which were conducted to calculate the emission reduction targets of industrialized countries fixed in the Kyoto Protocol.

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It was only against the backdrop of the alarming deforestation rates across the globe that the international community has eventually come to recognize the central role of avoiding the loss of tropical forests. REDD+ was born out of an imperative to address the large share of global emissions from deforestation, which is roughly 15 percent (van der Werf et al. 2009). The forest issue was reintroduced in 2005 by Papua New Guinea and Costa Rica as part of the newly-formed Coalition for Rainforest Nations (CfRN), where it became REDD - Reducing Emissions from Deforestation in Developing Countries. After a series of workshops and a few rounds of submissions to the UNFCCC Secretariat, in 2007, REDD was included in the Bali Action Plan and with that became a central element of a post-2012 climate regime.

Ever since, REDD has been broadened to not focus solely on carbon but to also promote additional benefits arising from forest conservation, sustainable management of forests and enhancement of forest carbon stocks, referred to as REDD+. REDD+ is organised around a different set of functions and purposes and in essence may fill the gap of a forest regime as well. At COP 15 in Copenhagen REDD+ was identified as a key instrument to avoid dangerous climate change. However, the failure of the Copenhagen summit delayed a first agreement on REDD+. To circumvent the UNFCCC deadlock and keep the momentum, representatives of 55 countries convened in May 2010 in Oslo and founded the REDD+ Partnership. They pledged a total of US$4 billion in fast start financing for REDD measures in the period 2010-2012. At COP 16 in Cancun in December 2010, UNFCCC parties finally managed to adopt a first agreement on REDD. The 2010 Cancun Agreements invite developing countries to prepare national REDD action plans, to establish national reference levels or, as interim solutions, sub-national reference levels. Developed countries, on the other hand, are asked to support REDD through multilateral and bilateral channels. Moreover, social and environmental safeguards were included to ensure that REDD+ does not generate negative social or environmental externalities (CIFOR 2010; IISD 2010).

While this design process is ongoing in the realm of the UNFCCC Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA), various other processes have emerged at intergovernmental, national and local levels. They include the Forest Carbon Partnership Facility (FCPF) of the World Bank, the Forest Investment Program (FIP) and the UN-REDD Programme. UN-REDD was the first program to conduct nationwide projects. Presently, the program operates in ten countries. Indonesia, Tanzania and Vietnam have successfully
completed their National Joint Programs and started first REDD+ initiatives. The FCPF has cooperated with 37 countries and disbursed US$10.34m until the end of December 2010 for the preparation of national REDD+ strategies through so-called Readiness Proposals. As of February 2011, a total of US$221.27 million have been pledged for the facility, US$174.47 of which have been deposited (Intergovernmental Taskforce 2010). The FIP, a multi-trust fund under the World Bank’s Strategic Climate Fund, was created by several regional developing banks, including the Inter-American Development Bank, and a few bilateral donors. As of October 2010, FIP has received total pledges of US$511.5m, of which US$102m have been deposited.

In addition to these multilateral bodies, bilateral activities (in particular by Norway, Germany, the Netherlands and Japan) and local-level projects run by NGOs significantly contribute to REDD financing as well as technical support. Finally, voluntary carbon markets provide funding for REDD+ pilot projects, the biggest such market being the Chicago Climate Exchange, which is currently preparing a REDD+ protocol (Intergovernmental Taskforce 2010). However, while voluntary carbon markets brought together approximately US$700m in 2008, only a fraction of this sum was associated with REDD+ projects.

The previous overview of the current REDD+ architecture reveals two major characteristics. First, the architecture is fragmented with different initiatives at different levels that are not fully coordinated among each other. Second, various important aspects of the emergent REDD+ regime still need to be defined or agreed, including sources of funding and the financing of different project stages (especially regarding the question of a market-based mechanism), overarching allocation criteria for the different REDD+ funds, methods of measuring, reporting and verification (MRV), dealing with national and international leakage, accepted types of national approaches (top-down, nested, etc.), the incorporation of issues of property rights and land titles, etc (Corbera and Schroeder 2011).

This dynamism and heterogeneity of the REDD+ process implies both strengths and weaknesses – that can be assessed inter alia along the dimensions of agency, authority, cognitive foundations and scale (see below). Usually, regime creation processes are

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understood, at least by the regime theory literature, to be quite top-down. REDD+ is a case where bottom-up activity is an unmistakably strong driver of regime design. This provides opportunities for transnational and sub-national actors to shape the future regime. But it might also entail risks due to the uncertainty of the process and the side-lining of certain actors across levels. It is a case that argues that regimes may well be ‘held in place’ by authoritative state actors and their agreements. But in order to understand the origins of regimes, what makes them viable and alive requires recognition of their multilevel and multi-actor dimension.

4 The Emerging Forest Carbon Value Chain

For purposes of analysis of the emerging value creation process, we bridge from purely commercial providers to bring into view the range of other intermediaries central in producing value in forestry carbon in ways suggested by the commitments and strategies of REDD+. This involves paying attention to public and international actors, civil society agencies, social movements, and critical experts. An empirical study of the emerging REDD+ value chain in southeastern Peru (Hajek et al. 2010) points to a generalised value chain for the emergent REDD+ market based on locating the activity of organizational actors, the intermediation roles they play in value creation, and work relationships observed. In contrast to others (Ecosecurities 2009), we suggest that financing, risk management, advisory and other institutional interventions are services located at specific points of the broader value constellation that supports the chain, rather than specific nodes of the ‘core’ chain at which a change in the value of the credit materializes.

We suggest that the sequential transfer of carbon rights, in exchange for monetary or non-monetary compensation, is the core characteristic of the REDD+ value chain. At origination the project feasibility is assessed. This node is the locus for behavioral change with respect to governance and land-use of the forest asset. At the development node the REDD+ credit is ‘formed’ through a multi-actor activity programme. At certification the credit is quality checked, approved (or not) and registered. At the sales node the credit is made part of a client offering (promotion, bundling, etc), before progressing to the final purchase node where utilization of the credit takes place.

Many kinds of organizations contribute to the emerging value creation process for REDD+ in Madre de Dios, Peru. Their activities and the emerging linkages among them describe the value chain activities we summarize in Figure 1. Some organizations are clearly positioned at only one node of the chain, as is the case with indigenous community asset holders, while other organizations work at multiple nodes. For example, the NGO Amazon Conservation Association (ACA) is at the forest asset holder node of the Amigos REDD project and at the
Figure 1: Emerging value creation system for REDD+ in Amazon Peru 2009.

developer node for the Interandean REDD project. Another example are the companies Asesorandes and Bosques Amazonicos (BAM) who are active at the project developer node, but also at the marketing and sales node of the chain. Of the 12 REDD+ projects in the 2010 study, seven have entered the development stage, of which five have undergone or are undergoing validation to an internationally recognized standard. Three of the projects are actively engaging in trying to sell credits, of which to date only one, the Maderacre REDD project, has sold REDD+ carbon credits.

We also identified more micro-level network strategies to build value in specific REDD+ projects. We show the core network structure between asset holders and development partner in more specific detail in Figure 2 below for the case of the Belgica project.

A rich cross-section of actors is participating in the REDD+ initiatives of the Madre de Dios watershed. Amongst the field based actors in Peru there are:

(1) non-profit conservation groups well established in the region, such as Amazon Conservation Association (ACA) and the World Wildlife Fund-Peru Office (WWF),
(2) non-profit natural resource management organizations that have arrived in the area to work specifically on REDD+, like the Asociación para la Investigación y el Desarrollo Rural (AIDER),

(3) Peruvian forestry businesses starting up in the ecosystem services and REDD+ space, such as Bosques Amazonicos (BAM) and Maderacre,

(4) Peruvian financial boutiques experimenting from scratch in natural resource management, like Asesorandes and Ecosystem Services Ltd.,

(5) indigenous communities from several different ethnic groups,

(6) grassroots organizations representing local forestry interests, like the brazilnut association (ASECAM) and the foresters association of Madre de Dios (FEPROCAM), and

(7) the Peruvian Government through national, regional, and local level institutions, most significantly the Forestry Department of the Ministry of Agriculture, the Ministry of Environment and the Office of Natural Resources of the Regional Government of Madre de Dios.

Another set of organizations is engaging from the international arena in service provision and market intermediary roles. These include:

(1) technical consultancies like Carbon Decisions and Winrock International,

(2) standards organizations such as the Climate, Community and Biodiversity Alliance (CCBA), and the Voluntary Carbon Standard (VCS),

(3) registry organizations like Markit Environmental,

(4) accredited project verifier organizations like Scientific Certification Systems (SCS) and the Rainforest Alliance,

(5) information providers, due diligence experts, and incubators like Forest Trends, New Forests and the Katoomba Ecosystem Services Incubator respectively, and

(6) financiers, for example, Sustainable Forestry Management Ltd. and SEM-Chile.

Fig. 2 presents the network identified in the Belgica project. From this network and those of the other projects, the multiple connections of asset holders and project developers became apparent, as well as the nodal position occupied by standard organizations such as the CCBA and market intermediaries such as Carbon Decisions.
Commercial providers in fact are not the earliest or most impactful actors in this emerging value chain. On the ground, the asset holders come first and collaborate with one or another of the organizations that make it possible to develop these assets through engagement with existing or newly created [systems = IDITC]. Hajek et al. (2010) argue that these initial and consequential collaborations shape the wider system of value creation. The analysis of the various ‘capitals’ available in those early partnerships underscores a further point: The asset holders and the organizations with which they collaborate work within broader systems of meanings and practices, or institutional logics (Friedland and Alford 2010).

Scriven (2010) finds that three logics have been operative in shaping organizational activity in the Peruvian Amazon, including orientation and meaning to the action of organizations engaging in REDD+ and that shape their views of what constitute legitimate objectives and how they may be achieved (Scott, 1994; Porac et al., 2002; Suddaby and Greenwood, 2005). These three logics are: a conservation logic, a social development logic and a commercialization logic (Scriven, 2010).

Fig 2: Exemplary actor value creation network for Belgica Project

Organizations working from a dominant conservation logic aspire to effectively sustain forests in the long term. The preservation of biodiversity and tropical rainforest is enshrined in their goals. Biologists and ecologists make up a large proportion of their staff, including at the senior level. Organizations that instead emphasize a dominant social development logic
focus on governance, capacity building and the importance of equitably addressing the needs of the people whose livelihood depends on forest ecosystems. They included community-based organizations as well as human rights and development organizations. Organizations that give primacy to a dominant commercialization logic tend to emphasize efficient management of projects and the need to ensure profitability in order to grow the business. They included commercial and grassroots natural resource management organizations. In most cases the asset holder and the developer work from different logics (eight out of ten projects) and different levels of natural, social and financial capital to the project (Hajek et al. 2011).

**Fig 3: Parallels between the Forestry Carbon Value Chain and the emergent International REDD+ Regime**

5 Two Approaches to Governance and the Lessons from Each

When evaluating these two processes behind what is labeled REDD+ we can discern two distinct approaches to governance: one that is grappling with classical social science challenges of structure and agency (Archer 2003; Wendt 1999); the other emphasizing a
‘partaking’ (Dorado 2005) approach to (un)coordinated action that yields order. Below we compare and contrast these two approaches by adopting an analytical comparative framework as outlined in Table 1.

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<th>Analytical tools</th>
<th>Value creation strategy</th>
<th>Regime formation</th>
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<td>Scale (mechanisms for growth)</td>
<td>Whether and how lessons and approaches developed at one level of governance can be scaled up or down to other levels</td>
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<tr>
<td>Cognitive foundations (logics, meaning, interpretation)</td>
<td>REDD can help mitigate climate change by putting a value on standing trees through international financial flows and carbon markets</td>
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<tr>
<td>Activity and how it ‘matters’ – what kinds of institutions and actors and what kinds of agency?</td>
<td>Intergovernmental negotiating processes create norms and rules around human-environmental interaction based on state sovereignty and international law</td>
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<td>Accountability – how are actors accountable and for what, to whom?</td>
<td>In intergovernmental decision-making and norm-setting processes accountability derives indirectly through the accountability of national governments to their voters</td>
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*Table 1: Analytical comparative framework*

REDD+ is an example of an archetypal boundary object; it is understood and used differently by different actors, each with distinct cognitive underpinnings and framings. REDD+ thus only obtains meaning or structure in a particular context (Star and Griesemer 1989). Here, we compare the boundary judgments made by the more top-down regime formation process and the more bottom-up value creation process to highlight how they each give meaning to REDD+ by applying the analytical tools of scale, agency, cognitive foundations and accountability.

*Scale*

In the context of regime theory, ‘scale’ is defined as the spatial, temporal, institutional, dimensions used to measure or rank any phenomenon. ‘Level’ is the unit of analysis located at different positions on a scale (Gibson et al. 2000; Cash et al. 2006). Actors contest scales and levels by shifting issues to those at which they are most influential or powerful. This is referred to as ‘forum shopping’: as a result issue-domains often shift up or down the governance scale (Gupta 2008). REDD+ is a good illustration of this dynamic. The REDD+ regime formation process is both spurred by and spurs developments of REDD+ initiatives at local, national and global levels.
In order for REDD+ to be effective, efficient and equitable, it is dependent on a host of conditions at all levels of governance, including strengthening domestic institutional capacity and transparency, accelerating national and local forest governance reforms, clarifying domestic land tenure systems, mitigating domestic illegal logging and trade and reversing economic incentives that drive deforestation (Seymore and Forward 2010).

Value creation…

The nascent REDD+ regime and carbon forest value chain are scale-dependent in a number of ways that become most apparent when focusing on the contextualities of REDD+, including land-use practices, political culture, enforcement, zonification, and national and sub-national narratives (e.g. Peru as “pais minero”). These domestic factors have an impact on the policy diffusion of REDD+. In some countries, this might provide opportunities (e.g. Costa Rica, Mexico), since the factors are conducive for the fast and equitable development of REDD. In other countries (e.g. Peru), these factors might have a detrimental effect on the development of the REDD+ regime.

Agency

In political science, agents have the ability to prescribe behaviour. Hence they are authoritative actors and can thus exercise power with legitimacy. While legitimacy for state actors may rest on the control over the institutions of the state and monopoly on the use of force, non-state actors base their legitimacy either explicitly or implicitly on moral arguments, expertise, participation or problem-solving ability (Dellas et al. 2011; Avant et al. 2010; Biermann et al. 2009). Solutions can be co-produced among state and non-state actors without diminishing each other’s agency, but rather perhaps augmenting it.

Regime approaches typically focus on the structural and aspirational features of emergent regimes: principles, norms, ideas, and decision-making mechanisms. The focus is de facto on authoritative actors – if not only nation-states, then a variety of actors that have public standing in global governance arenas of one sort or another. The particular strength of this approach is that it helps understand and inform governance and policy in settled regime arenas. As with all institutional approaches, regime arguments present regimes as both constraining - ‘setting the rules of the game’ - and providing authorization for actor-types and their activities.

Value creation approaches have a less disciplined view, starting from activity on the ground and the variety of empirical actors who may be involved in creating value. Over time, these basic network strategies for value creation encounter rules, norms, and the apparatus of the emerging regime. And in some cases, the actor constellations are able to shape the regime, at least provisionally and in light of some discretion in the emerging system of rules and norms.
In this case, the value creation approaches make it possible to notice agency ‘on-the-ground’, though over time the routines of emergent regimes may well limit that agency.

In the past five or so years we have witnessed the formation of new actor alliances that might benefit from REDD, including developing country governments (receiving support), companies (revenues), NGOs (gaining visibility in the increasing competitiveness with other NGOs) and minorities such as indigenous peoples (gaining agency through transnational advocacy). These alliances are visible at the international level / regime negotiations (regime theory) as well as at national and sub-national levels (value chain approach). They may lead to side-lining of the interests of local actors / users / native communities and an acceleration of the REDD process irrespective of issues that should be settled first, making second and third steps before the first one; e.g. first securing public enforcement, zonification, clarity on responsibilities, etc. Development assistance may change the balance between actors. For example, the KfW / FCPF funding strengthens the Peruvian ministry of environment, i.e. the national level – to the disadvantage of regional and project levels. Regime theory could explain this with state-centered focus which, at the end of the day, also dominates the development of the REDD regime – and undermines the many efforts that had been undertaken by NGOs, etc. at project and regional levels. For example, countries are favouring a national level approach over a project level approach in the AWG-LCA negotiations. Reasons include reducing country-level leakage, etc.

*Cognitive foundations*

The emerging post-2012 REDD+ mechanism is shaped by the climate regime’s objective to avoid dangerous interference with the global climate. REDD+ is therefore first and foremost about maintaining carbon storage in trees. But the UNFCCC forest definition, adopted in 2001, is generous with what it counts as forest at the expense of carbon storage value: “Young natural stands and all plantations which have yet to reach a crown density of 10–30 per cent or tree height of 2–5 metres are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes, but which are expected to revert to forest”. UNEP/CBD (2001) and FAO (2006) definitions are more stringent.

Three ‘logics’ come to shape capacity and action among REDD+ participants (Scriven xx). These logics draw from very different worlds and authority structures, and they represent different kinds of ‘capacities for action’ in Sen’s terms. The issue of logics also plays out across different levels of governance. We suggest that for REDD+ to be successfully implemented there will be a need to not only bridge across logics at the local level (Hajek 2011), but that this will also be necessary at the national level. For example, in Peru the Ministry of Environment, where a conservation logic prevails, is coordinating the REDD+ development process. However, the Ministry has been criticized for not involving other
sectors of government which are also key to the future of the rainforest. This applies equally to the Ministry of Agriculture, where a social development logic predominates and the Ministry of Economy, where a commercial logic clearly permeates the higher levels of decision making.

At the regional level, the young Ministry of Environment has no capacities at all, with the exception of the Madre de Dios region. Moreover, the recent decentralization process has led to a transfer of forest-related mandates to regional governments, however not coinciding with respective financial and personal capacities. Altogether, this leaves public actors in regions of the Peruvian Amazon with very restricted possibilities for implementation, monitoring and enforcement. Subsequently, an institutional logic and division of labor on environmental issues have developed over the last years where NGOs are filling the voids left by the public sphere. Both sides, regional governments and NGOs, are welcoming this development, while respective questions of legitimacy are often not addressed.

This institutional logic in the regions is side-lining the interests of other actors, in particular forest users such as indigenous or campesino communities. To a certain extent, this situation is mirroring the constellation of actors at the international level, where many governments, some NGOs and companies that are pushing for REDD are much better organized to make their voices heard than are community organizations.

**Accountability**

In conventional government systems the accountability and legitimacy of institutions and actors are clearly defined. For issue-domains where agents are not exclusively nation-states, accountability and legitimacy may become more nuanced. Often, solutions are co-produced by a host of state and non-state actors (Biermann et al. 2009). Novel accountability mechanisms that have emerged at different levels of governance include formal consultative rights, transparency, information disclosure, special rights enshrined in agreements, charters and codes, commissions that hear complaints and stronger participation of stakeholders in councils that govern resources (Biermann et al. in review).

In the UNFCCC REDD+ negotiations, accountability falls to national governments and their delegates and allows for some input from other actors according to the UNFCCC rules and conventions of observer organisation participation (Schroeder 2010).

In the value creation process, on the other hand, a multitude of actors are involved (see above), each with their own capacities and agendas, that collectively form a value chain…
6 Discussion

Regime theories provide a useful framework for understanding how stable patterns of action occur on terms specified by (state) actors on issues that span national boundaries or other settled spaces. The power of regimes in environmental arenas comes from XX, YYY and ZZZ (quotes from Oran Young here?). The current regime arguments focus on the multi-dimensionality of a regime: attention to the interplay of idea, norms, principles and decision-making mechanisms. The particular policy value from this framework comes where these elements are aligned into a coherent regime. The analytic value is to track the variety of paths of relevant norms, principles and decision-making processes into that zone of stable configuration, and then potentially to observe how it erodes over time as other regimes grow up or as challengers to components of the incumbent regime make inroads.

In this paper, we have harnessed regime approaches to focus on an emerging arena of international governance. The insights from regime theory point to XXX, YYY, and ZZZ. But some current features of REDD+ extend the available tools of regime theory. There are many kinds of actors, contending over diverse elements of REDD+ as activity. There are many venues. There are parallel conversations and initiatives occurring within bounded national jurisdictions, that engage issues that have to date been reviewed as only ‘national’ in scale or jurisdiction. These point to ways to extend existing regime theory.

We have also explored approaches and insights from innovation strategy and value creation approaches and their parallels in the economic sociology of markets. This work starts from a different question: Not ‘how to govern’ but ‘how is value created’. The focus on value creation privileges a focus grounded in specific places and activities, in a sense, not attending to the ambiguity of broader governance issues. This approach is also actor- and organization-rich: like many early 20th century institutionalisms in the social sciences, focused on the plurality of actors involved, the interdependencies among them, and their pursuit of varied purposes. This approach is more of a ‘mapping’ approach. We see what kinds of actors are working together, we see the kinds of struggles and challenges they encounter, and we see the impact of wider and various logics that inform these local strategies. This view is not complete, however; with it, we only observe what occurs; where there is inaction, or action blocked by incomplete institutional arrangements, there is no activity to observe. That said, the focus on value creation and market-building does give us a more fine-grained view of how local initiatives are defining the value chains that become the object of policy focus and governance in REDD+

7 Conclusion

[in development]
References


Hajek et al. 2010


Intergovernmental Taskforce 2010: Synthesis report: REDD+ - Financing and activities survey; online: http://reddpluspartnership.org/


Van der Werf, G. R. et al. (2009): CO2 emissions from forest loss, in: Nature Geoscience 2 (11), 737-738


Young, Oran R. 1991. “Political leadership and regime formation: on the development of institutions in international society”, International Organization 45, 3281-308


