

Multi-level governance of forest resources

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Abstract: A major challenge for many researchers and practitioners relates to how to recognize and address cross-scale dynamics in space and over time in order to design and implement effective governance arrangements. This editorial provides an overview of the concept of multi-level governance (MLG). In particular we highlight definitional issues, why the concept matters as well as more practical concerns related to the processes and structure of multi-level governance. It is increasingly clear that multi-level governance of forest resources involves complex interactions of state, private and civil society actors at various levels, and institutions linking higher levels of social and political organization. Local communities are increasingly connected to global networks and influences. This creates new opportunities to learn and address problems but may also introduce new pressures and risks. We conclude by stressing the need for a much complex approach to the varieties of MLG to better understand how policies work as instruments of governance and to organize communities within systems of power and authority.

Keywords: Decentralisation, forests, globalization, multi-level governance, natural resource management.

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I. Introduction

Authors writing about natural resource systems and their governance generally agree on their very complex nature, individually and as interacting systems. This is acknowledged by both the ecology literature (Campbell et al. 2001; Gottret and White 2001; Lovett et al. 2001), and governance scholars, especially in the work on decentralisation (Batterbury and Fernando 2006; Ribot et al. 2006; Veron et al. 2006). In addition, the work of political scientists (Nash 2000; Gilpin 2001; Vincent 2002; Jones et al. 2004) has underpinned the growing interest in multi-level governance associated with processes of regionalisation, globalisation, and the negotiation of multilateral environmental agreements (Trouillot 2001; Wardell 2002; Tickell and Peck 2003; Bache and Flinders 2004; Ballesteros et al. 2010). Processes of globalisation and decentralisation are not new (Hopkins 2002; Wardell and Lund 2006). Specifically, efforts to understand the structure and function of coupled social and ecological systems have been underway over several decades. This has been driven mostly by an increasing awareness of the policy and management failures arising out of a disregard for scale and cross-scale dynamics in human-environment systems (Berkes and Folke 1998; Wilson et al. 1999; Janssen et al. 2007; Mwangi and Ostrom 2008; Ostrom 2009). Still, a major challenge for many researchers and practitioners relates to how to recognise and address cross-scale dynamics in space and over time in order to design and implement effective governance arrangements (Cash and Moser 2000; Cash et al. 2006; Haberl et al. 2006; Armitage 2008; Berkes 2008; Brondizio et al. 2009; Nagendra and Ostrom 2012; Poteete 2012).

This special issue is the result of a pre-conference workshop organised by the Centre for International Forestry Research (CIFOR) during the 13th Biennial conference of the International Association for the Study of the Commons in Hyderabad on 10 January 2011. The workshop was convened in order to encourage dialogue and exchange among researchers and policy-makers with regards to structures and arrangements for forest governance given decentralisation reforms, global climate change, and international trade in timber and other commodities. Elinor Ostrom delivered the keynote address at the workshop. Her life's work has inspired many researchers and practitioners dealing with commons problems. This special feature, dedicated to her memory, is a celebration of her contribution towards shaping the evolving conversation on people, forests and the commons more broadly.

The special issue focuses on trying to improve our understanding of multi-level governance seen through the lens of forestry rather than identifying how to make it better. As one scholar has noted "The slippage

from seeking to understand *how* multi-level governance works to seeking to judge normatively *how well* multi-level governance works is highly pronounced in the literature.” (Stubbs 2005, pp. 69). This encompasses some preliminary reflections on how far we can ‘stretch’ the concept of multi-level governance (which has been strongly influenced by Western European and USA researchers and settings) to the complex politics of scale of forestry interventions in developing countries (see Stubbs 2005 for an analogous case of south-east Europe). We conclude by stressing the need for a much complex approach to the varieties of MLG to better understand how policies work as instruments of governance and to organize communities within systems of power and authority.

We begin this editorial by providing an overview of the concept of multi-level governance (MLG), in particular we highlight definitional issues, why the concept matters as well as more practical concerns related to the processes and structure of multi-level governance. The second section of this editorial synthesises conceptual and policy lessons from the eleven case contributions; it also provides a brief description of the major features and findings of each study case. We conclude by setting forth questions that we anticipate will advance inquiry into the theory and practice of MLG in forestry (and other) settings. Readers are kindly asked to note that six papers are currently available on line – the other papers in this special issue will be available on line in February 2013.

2. Multi-level governance matters in natural resource management: an overview

2.1. Why multi-level governance?

The concept of MLG emerged from mainstream political science (Bache and Flinders 2004, pp. 1), and the critical influence of Foucault’s seminal concept of ‘governmentality’ (Foucault 1991; Ferguson and Gupta 2002; Lemke 2002). This encompassed both the early examination of local government in the US (Ostrom et al. 1961; Hooghe and Marks 2003) and understanding processes of supranationalisation through studies of the European Union (EU) (see, for example, Matthews 1993; Blatter 2001), or the reach of the EU beyond European borders (see, for example, Bagayako 2010).

The concept of MLG continues to be relevant and whilst it remains a contested concept, “its broad appeal reflects a shared concern with increased complexity, proliferating jurisdictions, the rise of non-state actors, and the related challenges to state power” (Bache and Flinders 2004, pp. 4–5). They present four main dimensions which enable us to explore the concept of MLG more thoroughly. These are the increased role and participation of non-state actors, understanding decision making in terms of “complex overlapping networks” rather than “discrete territorial levels” (op cit, 179), the multiple transformations in the role of the state, and challenging conventional notions of democratic accountability.

Globalization and decentralization, and the multi-scalar social and environmental changes associated with each, are two related processes that create a need for better understanding linkages across different spatial scales and governance levels (Berkes 2008; Brondizio et al. 2009)¹. Globalization is an ideological and portmanteau concept employed by many authorities with different meanings and interpretations (Hopkins 2002). There is broad agreement that it is “a process that transforms economic, political, social and cultural relationships across countries, regions and continents by spreading them more broadly, making them more intense and increasing their velocity”.² The globalization of trade and investments, for example, is increasingly generating pressures to convert forests into various land uses such as biofuels and food plantations (German et al. 2011). Efforts at mitigating global climate change through REDD-plus and other initiatives are associated with global mechanisms such as carbon markets/credits, substantial financial transfers while at the same time requiring the monitoring and conservation of forest resources at local levels (Angelsen 2012). Both processes create different pressures at global, regional, national, sub-national and local levels, which may affect negatively or positively rules for resource access, use as well as incentives for sustainable use and management of forest resources. By increasing the number and type of actors, and the diversity of and asymmetries in interests, claims and influence, these processes intensify the well-known problems of exclusion and subtractibility that characterize common pool resources like forests, fisheries and pastures, and may lead to a breakdown of previously effective arrangements for resource use and control. Ultimately, global, regional, national and sub-national influences are all mediated at the local level (Rigg and Nattapoolwat 2001; Wardell and Lund 2006).

Thus multi-level governance devotes attention to the links between humans and their environment, which may occur vertically (i.e. from local to global) or horizontally (at the same level), as well as to contestation and learning among parties with a stake in forests and other natural resources (Long 1992; Folke et al. 2005; Armitage 2008; Berkes 2008; Brondizio et al. 2009). It provides a framework for analysis and scope to address complex multi-scale/level problems related to natural resource management (Termeer et al. 2010), albeit often at the intersection of different epistemological traditions.

Early examples of the need for and/or the existence of coordination across scales in NRM come from cases of integrated natural resource management (INRM). Campbell et al. (2001) discuss the complexity of INRM, a process that occurs at a number of scales involving multiple stakeholders, each with their own objectives and perceptions. They illustrate some of the challenges of MLG, which include the likelihood that interventions at one scale may have impacts at different (higher) scales, sometimes negative at one scale but positive at another.

¹ See Armitage (2008) for a typology of drivers of commons change and degradation.

² Hopkins, 2002: 16 citing Held, D., McGrew, A., Goldblatt, D., and Perraton, J. 1999. *Global Transformations*. OUP: Oxford.

For example, soil and water conservation interventions may improve crop yields at a specific site, but may show negative impacts at a larger scale by reducing water yields downstream. Similarly, small-scale extraction of groundwater resources may ultimately lead to depletion of the resource if too many boreholes are sunk. Another challenge concerns the appropriate level at which benefits are evaluated, which in turn depends on the types of impacts anticipated, objectives of assessments, the time scale used (Wardell and Fold, forthcoming), the level of accuracy required, and the value system that is chosen by the evaluator (Campbell et al. 2001).

Other areas of environmental research emphasize the importance of considering various scales, and hence, governance arrangements that encompass several levels. Cash and Moser (2000) highlight the need for integrating science and policy across multiple levels in climate change, and especially the importance of scale and cross-scale dynamics in global environmental change. Haberl et al. (2006) provide a framework encompassing four dimensions to enrich long-term socio-ecological research including governance and decision-making. Forsyth (2009) and Korhonen-Kurki et al. (forthcoming) consider the multi-level dimensions and challenges of REDD-plus monitoring, reporting and verification (MRV) and emissions leakage.

Environmental services and functions have multiple beneficiaries and claims to them at the national and global levels and it is essential to facilitate governance arrangements that are supportive of the diverse needs of a variety of users, yet protective of the long-term productive capacity of these resources (Murphree 2000; Lovell et al. 2002). Forest ecosystems are particularly complex and involve complex interactions between ecosystems and social systems with many biophysical, demographic, economic, and institutional factors affecting forest conditions (Poteete and Ostrom 2004). Integrated and well-linked resource systems (nested within national and international agendas, regimes, networks, and legal systems) are more robust/resilient than those with greater and fewer linkages (Adger et al. 2005). However, trade-offs exist and we need to be clear of the costs and benefits of striving for robustness (Fisher et al. 2011).

2.2. Conceptualization issues

The sections above show that there are multiple definitions of “scale” and “level”, depending on the research discipline and/or objective of the study. Many of these definitions have moved away from the original definition of “scale”, which is defined in the Oxford English Dictionary as “relative size or extent”. The natural science literature adopts more of the direct meaning of this work and sees it as an indication of an order of magnitude rather than a specific value (Schulze 2000). This literature also recognises the interconnectivity of scales and includes the important constraints, interactions, and feedback (lateral flows) that may be associated with changes in scale such as changes in spatial and temporal variability, in patterns of distribution, and in sensitivity (Schulze 2000). Scaling thus goes

beyond simple aggregation (up)/“scaling-out”, or extrapolation of approaches to sites with similar characteristics) or disaggregation (down) of results at one scale to achieve results at a more desirable scale (Lovell et al. 2002).

In governance research, this concept takes a different form and is understood more as linkages between various levels of governing bodies, local, national, and global. For example, Adger et al. (2005) define such linkages as direct interactions through networks to provide information or tangible resources related to natural resource management systems. They show that cross-scale linkages evolve and are maintained by the organisations and institutions involved in resource management to further their own interests. Furthermore, they posit that cross-level interactions among resource regimes occur when there is a vertical interplay between or among regimes located at higher and lower levels on the jurisdictional scale, for example, national and regional authorities. Such institutional interplay can be either highly asymmetric or relatively balanced. Gellert (2010) explores the idea of ‘extractive regimes’ to illustrate how neo-patrimonial networks have been maintained by political and economic elites. Recent work on the politics of scale interprets scale as contingent, complex and socially constructed (see Brenner’s review 2001).

Gibson et al. (2000) distinguish between the terms “scale” and “level”. By “scale”, they understand spatial, temporal, quantitative, and analytical dimensions that are used to measure any phenomenon. On the other hand, “levels” are units of analysis that are located at different positions on a scale. Cross-level interactions refer to interactions among levels within a scale, whereas cross-scale means interactions across different scales, for example, between spatial domains and (changing) jurisdictions. Multilevel refers to the presence of more than one level, and multiscale the presence of more than one scale, but without implying that there are cross-level/cross-scale interactions. Poteete (2012) offers a framework that bridges scales and levels.

The concept of nested governance, one of Ostrom’s (1990) design principles for the successful management of commons, also appears as a potential definition of multi-level governance. Nestedness or nested enterprises refer to the “nesting of local and larger institutional arrangements to accommodate the goals and interests of groups organised at different levels” (Brondizio et al. 2009). Such nested arrangements occur through representation, negotiation and decision-making processes at multiple scales. The challenges of how to achieve this in practice are of contemporary relevance in terms of mitigating the effects of global climate change (Cortez et al. 2010; Terra Global Capital 2010; Verified Carbon Standards 2012).

Murphree (2000) on the other hand proposes the concept of cascaded governance, rooted in the notion of jurisdiction, which he uses to denote a socially determined proprietary unit that forms the locus of use, management, and control over defined areas of resources, *de jure* or *de facto*. Though jurisdictions are socially determined, they are constrained by the resource base. Jurisdictions also imply boundaries that may be spatial or resource-specific, they may overlap or be nested in larger systems. But they also require social boundaries and a

specification of who has responsibility, authority, appropriative rights, and what the limits of these rights are (see also Dubois 1998). Issues of scale influence these boundaries.

2.3. Approaches to integrating cross-scale or cross-level coordination in resource governance

Two contrasting policy approaches have dominated the literature on multi-level governance: “Big Government” and “Small is Beautiful.”³ Both approaches represent the jurisdictional response to spatial and functional scale expansion, but both have inherent problems dealing with scale Murphree (2000). For “Big Government”, the problem is filling the gaps between relatively limited loci of jurisdictional power. The key problem with the “Big Government” approach is the predominance of centralised government agencies in shaping NRM regimes. Such interaction between government agencies and resource users often result in patterns of resource use that are not sufficiently flexible to adjust to sudden shocks to the system, such as climate variability (Adger et al. 2005; Mwangi and Ostrom 2008), or to excluding the influence of powerful interest groups appropriating rights to land and resources even when governments have dedicated programmes to protect local communities (Colfer and Capistrano 2005; Mwangi 2007, 2010; Larson et al. 2010).

“Small is Beautiful” seeks to place jurisdictions at local or communal levels. Small jurisdictions are assumed to be more transparent to their constituencies and thus are more politically acceptable. Controls exerted through local peer pressure are tighter and more efficient than externally-driven prescriptions. Furthermore, responsibility and authority, which must be linked, can be coordinated under one local institution or explicitly articulated between the limited ranges of actors involved (Lovell et al. 2002). However, “Small is Beautiful” may lead to a jurisdictional atomization that is unable to deal with scale requirements (Murphree 2000).

The main two solutions to the problems inherent in these two policy approaches have been proposed as two distinct, but related ideas that are seen as bridging the distance between the higher and the local level, viz., decentralisation and participation. Both imply a transfer of decision-making power and political power from the central to more local levels (such as province, district, county, parish or Community Based Organisations, CBOs) (Blaikie 2006). Both are also shaped by Western models of ‘civil society’ and ‘democratization’, and assumptions that these will foster the best possible forms of governance. Decentralisation as response implies the retention of authority by the central jurisdictions and the replication of

³ In contrast, Janet Newman’s work in a different context proposed four approaches to governance (self-governance, open systems, hierarchy and rational goal) based on two continua – degree of decentralisation/integration and degree of continuity/order (as distinct from innovation/change) (Newman 2001).

this authority at lower levels through a number of nodes of delegated responsibility (Murphree 2000). On the other hand, participation in decision-making about NRM requires a wide range of reforms, including downward accountability, granting of significant degree of autonomy in decision-making to the local bodies (environmental subsidiarity), and competent local institutions (Ribot 2001).

Empirical studies (see Blaikie 2006) show that many of the CBNRM operate only on a small scale and are challenged by, among others, limited devolution of fiscal authority, elite capture and resistance of officials who feel professional disempowerment by CBNRM. Others have shown that the recent wave of decentralisation reforms has left some local governments more dependent on central government subsidies than was the case in the 1950s (Wardell and Lund 2006). Lovell et al. (2002) also show that there is a need for appropriate support from different agencies that would allow the necessary degree of participation for interventions to be planned and function adequately.

Co-management, which represents a continuum of arrangements that rely on various degrees of power and responsibility sharing between government agencies and local communities has been proposed as an alternative (Carlsson and Berkes 2005; Cash et al. 2006). Proponents argue that successful co-management often arises from the adaptive, self-organising processes of learning-by-doing rather than from an optimal power-sharing across levels. It also represents a means of promoting cross-scale linkages for managing natural resources. However, in many countries local resource users are not the *de jure* custodians of forested land under co-management agreements with the centralized state often retaining responsibility to approve management plans and, if necessary, to revoke the agreement.

Co-management in NRM is closely connected with decentralisation, which is the second proposed solution to promoting multi-level governance, but represents a top-down approach to creating such linkages across scales. Andersson and Gibson (2006) in their study of decentralisation in the Bolivian forestry sector examine both the positive and negative aspects of the reforms. Proponents of decentralisation believe that it will increase accountability because local governments are more responsive and accountable than central governments. They also have better information on the local conditions and preferences, and will thus make better decisions regarding the provision of public goods. Opponents of decentralisation believe that these reforms may actually reduce local provision of public services because of local elites who can gain power in these reforms and use public funds in their own interests more easily than a central government can. In practice, rescaling governance by devolving authority to sub-national levels has often led to very different outcomes (Barr et al. 2006; Batterbury and Fernando 2006), and a subsequent tendency to recentralise the management of forest resources (Ribot et al. 2006; Phelps et al. 2010). Overall, the literature is quite ambivalent on the benefits vs. challenges of decentralisation reforms as well as its ability to truly promote local participation and create lasting and equitable governance arrangements for sustainable resource management.

Given the broad recognition of the growing complexity implicit in the concept of MLG, we do not want to limit ourselves to this dichotomization of “Big Government” versus “Small is Beautiful”. We recognise the emergence (and growth) in more hybrid forms of governance. This is supported by several of the papers in this special issue. In one case, (technological) innovation has catalyzed fundamental changes in how women are being challenged by middlemen in a new global shea nut value chain (Wardell and Fold, forthcoming).

2.4. Cross-scale/multi-level interactions: practical considerations

When talking about multi-level governance or coordination across scales, a key question that arises is about the actors involved. State agencies and officials at different levels are crucial actors (Wilder and Lankao 2006) in ensuring accountability, transparency, equity, and sustainability. Increasingly the role of the state is being transformed into one of coordination, policy and regulatory oversight, and networking. At the village level state officials and agencies can help facilitate the development and effectiveness of local organisations; at municipal levels they can provide assistance through policy and financial support to group activities; and at national levels a favourable policy environment is crucial for local organisations to be effective (Swallow et al. 2001). The latter may comprise mechanisms for resolving between-group conflicts, adopting a legal framework that recognises and enforces tenure and rights (Armitage 2008), or improving public access to information. In several cases overlapping jurisdictions result in new MLG dynamics, and reconfigurations of elite capture at different levels (Larson and Lewis-Mendoza 2012). The state, and processes of state (trans-)formation over time as well as the need to understand “how public authority actually works in the face of obvious state failure” continue to preoccupy scholars, even as non-state actors and “twilight institutions” are increasingly implicated in governing access to resources (Lund 2006, pp. 674; Wardell and Resosudarmo, forthcoming).

Boundary organisations, which play an intermediary function between different arenas, levels, scales and facilitate co-production of knowledge, are important. These bridging institutions can straddle and mediate the divide between science and policy, and perform a range of important functions such as information brokerage, facilitation of knowledge co-production, mediation and conflict resolution and accountability (Swallow et al. 2001; Cash et al. 2006; Clark et al. 2011; Bray et al. 2012). Better information and skills may also be important as negotiation support to manage or solve conflicts among stakeholders with competing interests (German et al. 2011; Komarudin et al. 2011; Bray et al. 2012).

Besides providing information and resources, transnational and national NGOs and private sector organisations can serve to counter powerful interests in natural resource extraction through improved accountabilities associated with increasing visibility and reputational costs of relevant actors (Keck and Sikkink 1998, Mwangi and Bahati, forthcoming), and the growing importance of independent

international certification and validation systems (Wardell and Resosudarmo, forthcoming). However, bridging relationships with external actors have their own dynamics and impacts on local capacity to respond to changes and pressures (Bebbington et al. 2006), and access to information by local actors (Brockhaus et al. 2012).

Brondizio et al. (2009) argue that social capital (which includes institutional rules and networks of trust) is an important factor in fostering cross-level linkages, yet the presence or lack thereof of social capital at one level may positively or negatively affect social capital at another level. The key is to identify those linkages that promote the potential for enhanced management and avoid those that undermine trust between stakeholder groups (Adger et al. 2005). Trust building is however hindered by various other challenges, which include: 1) mismatches between ecological and institutional boundaries; 2) problems of exclusion and subtractability; 3) shifts in jurisdiction and authority over resources; 4) the possibility that rule compliance declines as higher levels are attained; and 5) differences in knowledge and access to information at different levels. Brondizio et al. (2009) sum these as the challenges of ‘fit’ and ‘interplay’ that must be confronted when considering arrangements for fostering cross-level linkages and interactions.

The form of cross-level interactions is also strongly influenced by the power relations inherent within them. Different stakeholders use institutions and linkages to further their own interests (Lovell et al. 2002, Adger et al. 2005). Important elements of power include how decisions are negotiated, how/what trade-offs are made, and how other actors are involved or not (Adger et al. 2005). Knowledge and information are key resources: they are used both by dominant parties and those resisting action (Swallow et al. 2001). MLG allows us to explore both the vertical integration of actors and institutions “above” and “below” the nation state as well as the growing horizontal complexity of interactions between state and non-state actors. New forms of state accountabilities, such as anti-corruption commissions and anti-money laundering legislation and the emergence of novel public-private partnerships can also be explored. Overall, effective multi-governance arrangements are reliant on coordination to reduce and contain the transactions costs of advancing collective action among diverse actors across diverse decisions. Social capital, comprising networks of rules, norms and trust help coordinate and constrain the behavior of diverse actors at multiple levels (as well as horizontally). This occurs along a number of dimensions, including: 1) moderating the power and influence of dominant actors; 2) resolving conflicts of different kinds; 3) distributing benefits and burdens; 4) assigning responsibility and enforcing accountability; and 5) channeling information and knowledge.

3. Multi-level governance in practice: a “curates egg”?

This section describes the case study contributions in this special feature. The cases consist of studies conducted in different settings in Latin America, Africa

and Asia. They illustrate both conceptual and practical dimensions of MLG. Each case highlights several features of MLG that have been identified in the preceding section and each provides insights into key challenges and opportunities for MLG under contemporary forestry issues that include decentralisation, the implementation of REDD+ schemes, climate adaptation, and trade in forest-related commodities. Though cases are embedded in concrete contexts, together they reiterate the dilemmas of complex social interactions as actors and institutions proliferate in an interconnected policy regime. These dilemmas include, the time and experimentation dimensions so critical to policy reform and implementation, the difficulties of coordinating multiple interests, the necessity but difficulties of fostering learning, the difficulties of enforcing rules and ensuring that tasks assigned to different actors at different levels are implemented, the importance of trust, leadership, and negotiation capability for enhancing multi-level collective action, and the centrality of power in the allocation of resources, responsibilities and accountability among actors. The cases demonstrate the multi-dimensionality of MLG, which includes both institutional and technical aspects. Some of them contribute to theoretical and conceptual advancement of MLG by clarifying the limitations of our current conceptual toolkit, making transparent the points at which such tools lack clarity and precision, while extending current concepts to better capture reality.

In the first article, Nagendra and Ostrom discourage blue-print thinking. Drawing from specific cases of forestry decentralisation, nationalised management and community-level management, they conclude that none of these is in and of itself a solution, each design is marked by both successes and failures. Nagendra and Ostrom, however, demonstrate that instances of effectiveness have been characterised by several features, regardless of specific institutional design or legal structure: interactions among actors (state, civil society and private) that involve trust-building and which diminish power asymmetries and align interests. The authors emphasize the centrality of analyzing actors' incentives, but suggest that though different actors may of necessity play different roles, these roles are not pre-determined but may vary with context. In sum, Nagendra and Ostrom argue that formal structures are mediated by linkages, interactions and incentives that span multiple levels and scales. A major challenge is to foster interactions that are effective and robust, and which take into account the complexity of social-ecological systems.

In the second article, Poteete challenges current conceptualizations of the "multiples" affecting natural resources. She argues that the terms "multi-level institutions" and "multi-scale linkages" are unnecessarily restrictive and incomplete, limiting their analytical value. They overlook important interactions as each emphasizes different factors, processes and relationships. Framing from a multi-level institutions perspective is institutions-centric, focusing on interactions between institutions and other parameters in the social and biophysical arenas. The role of elites, institutional arrangements and policy goals, as well as factors that

influence actions such as learning, adaptation, coordination and accountability are issues associated with this perspective. On the other hand, multi-scale linkages brings to the forefront a different set of issues that are analytically complementary, such as power relations, interactions between agency and structure, and the dynamics of system interactions and reproduction, including both temporal and spatial dimensions. This perspective allows for the possibility that interactions in socio-ecological systems may include relationships over and above the fit or interplay of institutions. The author argues for a hybrid (i.e. multi-dimensional linkages) that incorporates both perspectives, but also leaves room for other kinds of linkages, which are important dimensions of socio-ecological relationships but are poorly captured by scale or level.

In the third article, Bray, Duran and Molina-Gonzalez use an exceptional case to analyse the emergence and functioning of collective action at community level, broader spatial scales and higher governance levels. They suggest an expansion of Ostrom's (1990) design principles, re-orienting the principle of nestedness to better portray non-linear, "turbulent" interactions between local, national and international level actors. The authors illustrate that trust is essential. In addition, sufficient autonomy at local level provides flexibility for rule changes, while the actual realisation of benefit flows from forest conservation is an added incentive for maintaining collective rules and restrictions. A key feature of engagement of multiple actors over the 20 years the analysis spans is turbulence. Multiple, conflicting interests and negotiating around them is a major undertaking in multi-level interactions. Boundary organisations (e.g. NGOs and research establishments) by providing community leaders with negotiation support, information, and funding, lower the transactions costs of within and inter-community collective action. Visionary leadership is another essential ingredient in fostering multi-level collective action. The overall outcome of multi-level collective action is an improvement in the fit between forest ecosystems and their management structure, and the subsequent generation of a set of incentives that is conducive to forest conservation.

In the fourth article, Larson and Lewis-Mendoza interrogate a seemingly "ideal" case of decentralisation/devolution. Though the piecemeal devolution of forestry decision-making and authority over a period close to two decades appears to have assigned specific political and economic tasks and roles to four layers of governance (regional, municipal, territorial, communal), various design flaws and interactions among strategic actors hinder the effective governance of forest resources across these various levels. The authors illustrate how legal ambiguity and overlapping jurisdictions create conditions for forum shopping and elite capture. Moreover, although community rights and participation are protected by law, breaches of law by municipal government officials and outright disregard for regional authorities continue to endanger local community rights to resources. Territorial authorities are subject to arbitrary decision making, openly flouting rules for the selection of representatives where elected leaders are members of the political opposition, or misappropriating funds. Similar patterns are played out at the community level, with unaccountable leaders selling community land and giving out contracts for resource

exploitation without community knowledge and/or consent. Despite generally highlighting the dysfunctions of the system, Larson and Lewis-Mendoza point to several instances when the status quo was challenged and authorities were forced to respond to community demands for enforcement and for accountability. These instances are instructive. They demonstrate that alliances with boundary actors (i.e. NGOs and activists) can be useful in leveling the playing field where power, politics and a lack of accountability undermines local rights and participation.

In the fifth article Brockhaus, Djoudi and Kambire puzzle about elements of governance that influence groups' and individuals' capacities to adapt to climatic variability or extreme weather fluctuations in order to sustain forests goods and services that support their livelihoods. They focus especially on individual and organisational understandings of the problem as well as institutional flexibility, both of which influence responses to change and the adoption of relevant adaptive measures. They show that a plethora of actors are involved in adaptation planning from international to local levels, yet people at the local level continue to respond to or cope with climatic stressors mostly in a reactive, unplanned manner. Coordination of these multiple actors, remains a major challenge: competition among donors and public officials rent-seeking are examples. The authors consider how to improve this dismal scenario to ensure that desired outcomes (system stability and provision of goods and services) are realised.

Ribot and Larson's contribution in the sixth article raises serious questions about REDD plus. In light of all the uncertainties and risks associated with market mechanisms, age-old questions prevail: how can justice and local aspirations be taken into account? How will rights be established and enforced? The implementation of statutory reforms, including decentralisation, provide the institutional backdrop against which REDD will be implemented — this is in order as REDD is not implemented in a vacuum in any given setting. The authors trace decentralisation laws, which on paper devolve substantial authority and decision-making power over forests to rural communities. Practice, predictably, is another matter: the forest service refuses to transfer powers, and local authorities and leaders are pressured to give away local forests. With regards to market access, the quota system for allocation of licenses for trade in charcoal (which was banned under the new law) persists. New licenses continue to be allocated mostly to relatives of powerful merchants and political allies thus concentrating benefits among elite actors. Given this dispensation, Ribot and Larson are apprehensive that safeguards designed under REDD are unlikely to yield benefits for local communities or protect their rights. They argue that, as a minimal standard, poor, rural communities must be represented proportionally to their numbers in REDD decision-making and implementation processes, in addition to mandating safeguards.

Kaisa et al. in the seventh article in this special issue, begin from the premise that demands for climate change mitigation originate from the global level yet responses in terms of reduced degradation and deforestation require the

involvement of actors and institutions at lower governance levels, from forest users, through sub-national and national levels. Thus multi-level governance concerns are ubiquitous in the implementation of REDD+ schemes. The authors use the specific case of the establishment and implementation of measurement, reporting and verification — a mechanism which involves the determination of baselines against which the magnitude of benefits and identity of beneficiaries is set. The authors find that there is hardly much consensus globally, nationally, sub-nationally and at the community level of the appropriate methods and technologies for doing setting up reference levels. International verification schemes are complicated, while conflicts are rife over information quality, land cover classification, and relevant data sets are patchy and scattered. Various interventions have been useful in harmonising information, this includes the establishment of new institutions (some with high-level backing), voluntary, ad-hoc working groups, formal taskforces, and the re-orienting of existing institutions. Information bottlenecks are not unusual as strategic actors seeking to capture and concentrate rents obstruct information flows. Informal arrangements and networks can permit flows but run the risk of excluding individuals and groups that are not a part of the networks. Ultimately, the authors suggest that stakeholder participation and representation can help address some of these deficiencies.

Wardell and Resosudarmo, in the eighth article, explore the complex multi-level governance challenges associated with the design, development and validation of a REDD+ project in Central Kalimantan, Indonesia. The authors use a grounded case study to highlight the large number of organisations involved in securing rights to carbon-rich peatlands using licensing procedures overseen by the national Ministry of Forestry, and inchoate spatial planning and environmental and social impact assessment processes at provincial level. This is compounded by the growing complexity of normative frameworks governing access to international voluntary carbon markets, and the requirements to develop and validate new methodologies and projects using multiple international standards. Immoveable property rights remain the pre-eminent domain of the state. However, the authors show how the emergence of a new forest carbon value has led to a proliferation of new actors at national, sub-national and project levels. This has resulted in multiple claims by the state and non-state actors at different levels of political activity. Furthermore, the proliferation of non-state actors has not been limited to lobbying, advocacy and advisory roles; many have become agents of forest governance by substantively participating in and/or setting their own rules. The blurring of boundaries between state and state-like institutions underscores the need to ensure that relations of power, which often underlie social vulnerability, become (more) visible. The authors suggest that the importance of forests in mitigating climate change must be balanced by the concomitant need to ensure the effective engagement of forest-dependent communities in the design and development of REDD+ projects. The authors raise questions about the legitimacy of the institutions and processes described

at multiple levels, with a particular focus on the extent to which local forest-dependent communities have any real understanding of carbon *per se*, a REDD+ project and carbon markets. A significant risk remains given the current 'non-governance' of anticipated REDD+ revenues in the absence of clear benefit-sharing arrangements.

Kishor and Lescuyer, in the ninth article, discuss the diversity in the production and trade of illegal timber and the subsequent diversity of measures and tools for controlling trade at domestic and international levels. They indicate that domestic markets in developing countries are supplied by illegally logged timber through informal networks of producers, middlemen, traders and purchasers and benefits captured by a small group of elites. International markets are connected to domestic ones and share similarities, including a complex web of operators and unequal distribution of benefits. However, timber flows across international boundaries are also characterized by a complex process of legalization and ironically, stimulate (and feeds off) other activities such as money laundering, land speculation, drug smuggling and prostitution. The complexity of the problem has demanded complex solutions. Efforts at controlling the production and movement of illegal timber involve the design and implementation of institutions, incentives and disincentives targeted at spatially distinct parts of commodity and financial flows. These efforts include reforms of logging permits in supplier countries, certification schemes, anti-money laundering laws in supplier and consumer countries, and laws and codes of conducts in destination countries. Evidently, collective action and coordination within and across borders, among government agencies, private corporations and individuals is necessary. The system of interventions is fairly recent, and though imperfect in ways the authors outline, have led to substantial reductions in illegal logging and trade in highly forested countries of the humid tropics. The authors however recommend distinct approaches to curb illegality: "follow-the-logs" in developing countries and "follow-the-money" in developed countries.

Wardell and Fold, in the tenth article, trace the unsuccessful efforts to incorporate a colonial backwater into the global economy. The absence of exportable raw materials, and high transport costs from the Northern Territories of the Gold Coast Colony (NT) ensured that the more accessible and better endowed areas of the Gold Coast Colony and the Colony of Ashanti were developed first. Thus, the NT encountered forest conservationism late in the colonial era. Non-Timber Forest Products such as the shea nut and shea butter have been produced, transformed and traded for centuries across territories in West Africa and remained, until the 1990s, relatively isolated from global markets. The authors compare and contrast contemporary patterns of production, trade and regulation in the context of post-2003 efforts by the Government of Ghana to expand the shea nut trade as part of the state's portfolio of 'major non-traditional agricultural export commodities'. The authors highlight that these historically and culturally-embedded patterns of shea trading may now be challenged by the emergence of new processing technologies, and the restructuring of commodity chains due to

growth in global demand for cocoa butter equivalents in the chocolate industry. The control of production and marketing by women may now be compromised as new middlemen, bulkers, and wholesalers enter the expanding export trade, most of whom are men who increasingly govern the trade with three global buyers. The authors recognize the constancy of three-day periodic markets that have enabled women to sustain their livelihoods and to reproduce social relations devoid of 'boom and bust' cycles, and price wars that often characterize globally-traded commodities such as palm oil and cocoa in southern Ghana. In contrast, both the colonial administration and post-independence governments have been blind towards the socio-economic functions and importance of local and regional flows of shea products to meet domestic needs. The dynamic complexities of human-ecological relationships continue to reflect the complexity and diversity of negotiated historical encounters, and new and emerging market opportunities at different times.

Mwangi and Bahati, in the eleventh article, confront the issue of collective action among civil society (local and international), public officials and multi-lateral institutions in addressing large-scale land acquisitions for biofuels development. This is of particular interest for several reasons. First, grievances owing to processes and impacts of large scale land acquisitions are numerous and well documented, yet an analysis and understanding of how these grievances have been channeled, by whom, using what strategies and their effectiveness is missing in current analyses. Second, it presents an opportunity for understanding whether and how (and the conditions under which) multi-level organizing can thwart unilateral decisions by high-level government officials allied to powerful investors. The authors find that a consortium of environmental, human rights and corruption-focused NGOs served to organise and coordinate different types of actions involving a broad range of actors. Actions used were diverse, targeted at different audiences with the aim of increasing the visibility of the illegal allocation (including negative effects on forest biodiversity and peoples' access), increasing the reputational costs of government actors and sullyng relationships between investors and their international financiers. The authors demonstrate how collective action, coordination and alliance building among local communities, urban-based environmental groups, forestry officials, the media, opposition politicians and international actors (including donors and conservation groups) exerted sufficient pressure to compel the withdrawal of intended allocations. They suggest that multi-level collective action can provide an avenue for addressing abuses of power to impose vertical accountability in the management of forest resources.

4. Multi-level governance of forest resources: old challenges and new opportunities

The papers presented in this special issue illustrate the importance of understanding the increasingly complex networks of actors at different scales and levels. It is clear that MLG of forest resources involves complex interactions of state, private

and civil society actors at various levels, and institutions linking higher levels of social and political organization. Local communities are increasingly connected to global networks and influences. This creates new opportunities to learn and address problems but may also introduce new pressures and risks. Although the potentials *and* limitations of globalization are increasingly recognized (Milanovic 2003; Schaeffer 2003; Wade 2004), the debate remains “almost exclusively Western in conception and indeed in orientation too” (Hopkins 2002, pp. 19). The continued de-emphasis in exploring power relations in MLG is of particular concern if we are to improve our abilities to define policy and institutional responses to address the problems associated with processes of globalization and decentralization. The following section presents three ideas of themes that merit additional research on MLG of forest resources.

4.1. Analyzing multi-level governance in a historical context

History matters and there is considerable scope to undertake more comparative work of MLG in different historical contexts. Many of the arguments for greater state control over land and forest resources in the (European) colonial era were founded on assumptions about the inherent destructiveness of local resource and land use practices. The appropriation of customary lands was also shaped by the articulation of national timber (or wood fuel) and global environmental crisis narratives. Local resource users were persistently framed as profligate land and resource users but encountered forestry as a ‘science of empire’ (Grove 1995; Griffiths and Robin 1997; Barton 2001) in different places, and at different times. Empire forestry models comprised three main elements, viz., the appropriation of lands to create national networks of forest reserves, the establishment of Forestry Departments to oversee the introduction of ‘scientific forestry’ principles and multi-faceted efforts to regulate and control bushfires, and the production and marketing of wood fuels and other Non-Timber Forest Products.

Decades after independent governance regimes appeared, the legacies of institutional and jurisprudential models introduced by different European powers continue to shape rules of access to land and forest resources, and the strategies adopted by local resource users to protect and maintain their rights. As new values of forest resources (such as carbon and other environmental services) have been recognized, a plethora of new actors, new claims and new contests have appeared creating new networks of actors. The analysis of changes in governance regimes over longer time periods can provide critical insights on the continuities and discontinuities in governance arrangements, and how local rules in use continue to exist outside formal (and changing) institutional frameworks. The contemporary literature exploring the complex webs of raw materials, labour and globally-traded commodities (or the influence on these of changes in technology and product markets) often also tend to be ahistorical.⁴

⁴ A notable exception is Rammohan and Sundaresan (2003).

4.2. Grounding globalizations

The complex manner in which pressures associated with contemporary processes of globalization can themselves contribute to new forms of social and political organization suggest a need for more ‘grounded globalizations’ (Burawoy 2000, pp. 341). Forest products often exhibit an intricate mix of trade flows caused by different use values and the dynamics of demand patterns – locally, regionally and globally. The relative importance of different flows raises important questions in relation to local food security, environmental sustainability and the resilience of socio-economic systems dependent on customary methods of collection, processing and trading. Heretofore, priority has been paid to issues concerning quality regulation, upgrading and governance structures, particularly in relation to agricultural chains, with an unambiguous global orientation (Raikes and Gibbon 2000). This attention towards prospects and potentials for chain upgrading in developing countries is linked to the broader debate on development via participation in global markets as an (assumed) more viable alternative to reliance on local or regional domestic markets.

Studies inspired by the global commodity chain approach are usually monolithic in assuming that either all production is destined for global markets (echoing earlier perceptions of the need for the incorporation of the rural producers into the world market or that upgrading constitutes the ‘Holy (Economic) Grail’ for developing countries to pursue (Gibbon 2001). GCC analysis has in some cases also reinforced the earlier tendency to dismiss the power of local processes, and to give undue regard to local agency. Nevertheless, some scholars have noted that “...the silences and ambiguities in the original conception (of commodity chain analysis) yield flexibility both in formulation and application of the concept” (Rammohan and Sundaresan 2003, pp. 905). We would also question the contentions that post-colonial globalization has eroded the significance of territorial boundaries and/or systematically marginalized producers in developing countries. We suggest that localized cross-border and regional movements of tradable commodities can in fact enhance, and continue to provide opportunities for traders to adapt and sustain their livelihoods (Wardell and Fold, forthcoming).

4.3. Cities of farmers?

The processes of rural change and urbanization in many parts of the world are associated with changes in livelihood opportunities, patterns of cyclic migration and the emergence of multi-locale households scattered across rural and urban landscapes. The mixed and mobile nature of rural life is not new (see, for example, Cordell et al. 1996). Additional MLG research is necessary, however, to improve our understanding of the dynamic transformations of Latin American, African and Asian rural spaces, and the accelerated pace of these changes. The multiple dimensions of the political economy of urbanization (Roberts 1978) continue to constrain, and provide opportunities for local (formerly rural) people. Recent studies of rural landscapes in Thailand identified three concurrent processes:

a delocalization of living, a disembedding of households and a dissociation of the village-community, manifested *inter alia* as a geriatrification of farming, the generational drift of non-farm work and increasing complexity in household form (Rigg et al. 2012). Similar patterns have been observed in Amazonia (Padoch et al. 2008). The early theoretical exploration of local (municipal) government in the USA (Ostrom et al. 1961) may now provide useful insights to deepen our understanding of MLG of these complex multi-sited urban-rural communities in developing countries.

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