



## Analysis

Transaction costs, power, and multi-level forest governance in Indonesia<sup>☆</sup>Caleb Gallemore<sup>a,\*</sup>, Monica Di Gregorio<sup>b,c</sup>, Moira Moeliono<sup>c</sup>, Maria Brockhaus<sup>c</sup>, Rut Dini Prasti H.<sup>d</sup><sup>a</sup> Department of Geography and Environmental Studies, Northeastern Illinois University, United States<sup>b</sup> School of Earth and Environment, University of Leeds, United Kingdom<sup>c</sup> Center for International Forestry Research, Indonesia<sup>d</sup> Unaffiliated

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## ABSTRACT

Since 2005, there has been considerable international interest in Reducing Emissions from Deforestation and Forest Degradation (REDD+), a program intended to finance protection of tropical forests through the sale of carbon offsets or from donor funding. Requiring the collaboration of local and international civil society stakeholders, firms, and donor and host governments, REDD+ is inherently a multi-level governance project, but to date participation in REDD+ and coordination across governmental levels have been weak. Combining literature on multi-level and polycentric governance of socioecological systems with transaction-cost economics, we argue that transaction costs structure cross-level information-sharing and collaboration relationships among organizations engaged in REDD+ policy development at the national and provincial levels in Indonesia. Using an exponential random graph modelling approach with data collected from interviews with over 80 organizations between 2010 and 2012, we find that powerful organizations tend to dominate cross-level connections, though this effect is somewhat mediated by organizational similarity, which reduces transaction costs. We suggest that explicit efforts to help local organizations overcome the transaction costs of building cross-level relationships will be a central component of building an effective and equitable multi-level governance system for REDD+ in Indonesia.

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## 1. Introduction

During fieldwork for this article in 2010–2012, we asked about the future of Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Indonesia. National government actors often pointed at Central Kalimantan, selected as a pilot province for REDD+ policy as part of a \$1 billion forest protection agreement between the governments of Indonesia and Norway. Provincial officials, on the other hand, often looked to Jakarta. Despite nearly

constant conferences and workshops in both Jakarta and the provincial capital of Palangkaraya, attended by representatives of dozens and in some cases hundreds of interested organizations, REDD+ policy suffered from a “failure to communicate” across governmental levels (see [Bache et al., 2015](#), for another example).

How can we account for this sub-optimal process? Following [Leifeld and Schneider \(2012\)](#), we suspect that transaction costs result in an underproduction of interaction in multi-level governance systems. Working with other organizations requires dedication of staff time, material resources, and – most importantly – building trust and gaining recognition as a reliable, even necessary, partner. Organizational leaders constantly must weigh these costs and benefits of networking. When costs are significant – as we expect them to be in the multi-level case – we expect the most influential organizations will tend to dominate governance networks. Influence is important for a variety of reasons. First, it provides a proxy for institutional resources but, more importantly, influential organizations have the luxury of letting others come to them ([Moeliono et al., 2014](#); [Leifeld and Schneider, 2012](#)). We further expect organizations to take advantage of lower transaction costs afforded by institutional similarities, which should ease the challenges of building trust and regularizing exchanges.

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Assessing the promises and pitfalls of multi-level relationships is a key area of inquiry in research on the governance of socioecological systems (Ostrom, 1990, 2005; Holling et al., 2002; Berkes, 2002; Young, 2002; Armitage, 2008; Kok and Veldkamp, 2011; Gibson et al., 2000; Cash et al., 2006; Vervoort et al., 2012; Poteete, 2012), and the problem-solving potential of institutional systems integrating multiple governmental levels has been noted in the context of forest governance (Andersson and Ostrom, 2008; Nagendra and Ostrom, 2012), climate change mitigation (Ostrom, 2010, 2012), biodiversity (Galaz et al., 2012; Gatzweiler, 2005), and water management (Huitema et al., 2009).

Requiring effective integration of both local and national forest policies and institutions, REDD+ is inherently a multi-level enterprise (Korhonen-Kurki et al., 2012), in which weak cross-level relationships can impose significant limitations on policy. A recent and salient political issue, REDD+ policy development in Indonesia provides an opportunity to study multi-level governance systems as they emerge. Our research allows us to contribute to debates on multi-level governance by developing a theoretical account of the role of transaction costs in the evolution of multi-level governance systems, focusing specifically on the factors leading to the formation of cross-level relationships.

We also contribute to the debate on REDD+ by elucidating the barriers to cross-level information-sharing and cooperation in more detail than previous studies, relying upon quantitative data from interviews with 81 organizations involved in REDD+ policy development in Indonesia at both the national level and in the REDD+ pilot province of Central Kalimantan. Like other recent studies of organizational relationships in multi-level governance systems (Leifeld and Schneider, 2012; Lee and van de Meene, 2012; Gerber et al., 2013), we utilize an exponential random graph model (ERGM) framework to test our hypotheses that powerful organizations will dominate cross-level relationships and that organizational similarities will lead to more frequent cross-level connections. To our knowledge our approach is unique, however, in focusing specifically on cross-level connections, whereas previous studies have focused on a single level of a policy arena. We find that for both levels an organization's reputational power is a strong predictor of propensity to engage in cross-level information-sharing and collaboration, suggestive of transaction-cost effects. In addition, we find a tendency for organizations to engage in cross-level relationships with organizations of the same type, though we find mixed support for the idea that differences in organizations' policy perspectives impede collaboration.

Overall, the results suggest transaction costs are an important factor in multi-level governance, potentially inhibiting the development of effective and equitable multi-level governance systems. Mitigating transaction costs, we argue, should be a central component of efforts to build robust multi-level governance for REDD+.

We begin our discussion with an overview of our theoretical framework. Utilizing recent expansions of the concept of transaction costs to include cases of non-market interactions in areas like governance and policy development, we identify multiple costs involved in engaging with REDD+ policymaking and governance. After outlining our theoretical position, we examine the history of REDD+ policy development in Indonesia, with a particular focus on the importance of cross-level connections. We then explain our data collection process and the exponential random graph model (ERGM) framework used to test the hypotheses developed in our theoretical section before presenting our results and discussing broader implications.

## 2. Multi-level Governance and Transaction Costs

As has been frequently noted, REDD+ is an inherently multi-level governance project (Skutsch and Van Laake, 2009; Forsyth, 2009; Schroeder, 2010; Doherty and Schroeder, 2011; Korhonen-Kurki

et al., 2012; Gallemore and Munroe, 2013). Intended to protect forests through a transnational payment for ecosystem services scheme focused on carbon sequestration, REDD+ would ideally involve donor government agencies, firms, host country governments, international organizations, civil society, and forest landholders, many of whom will have different interests in and knowledge about forest policy (Skutsch and Van Laake, 2009; Forsyth, 2009). Negotiating these multiple governance levels can be a challenge for some actors, who may have agency only in specific contexts (Schroeder, 2010). Conflicts of interest between agencies governing different sectors or operating at different governmental levels, policy stakeholders, and status quo interests, coupled with a lack of coordinated information between levels, provide an opportunity for powerful actors to control information and resource flows, directing institutional development according to their interests (Korhonen-Kurki et al., 2012). As Korhonen-Kurki et al. (2012) argue, developing a robust multi-level governance framework for REDD+ would be one way to improve participation and potentially limit the ability of powerful groups to monopolize the policy process.

Korhonen-Kurki et al. (2012) further note that considerable institutional reforms will be necessary to ensure that robust multi-level governance for REDD+ emerges, and current trends are not inspiring. As will be seen in our discussion of REDD+ in Indonesia in the following section, in many places the ground is not particularly fertile for robust multi-level governance systems. A careful consideration of the role of transaction costs in impeding participation and providing opportunities for powerful groups can contribute significantly to our understanding of the challenges involved in developing robust multi-level governance systems for REDD+.

Literature on polycentric and multi-level governance highlights the importance of connections across governmental levels for the management of complex socio-ecological systems (Gupta, 2007; Bulkeley and Newell, 2010; Agrawal et al., 2013; Carlsson and Sandström, 2007; Crona and Hubacek, 2010; Prell et al., 2010; Cleaver, 2000; Rhodes, 1997; Poteete, 2012). Work on polycentric governance, associated most closely with Elinor and Vincent Ostrom and their collaborators (Ostrom et al., 1961; Ostrom, 1990, 2005), highlights the potential of semi-autonomous organizations engaged in regular communication and collaboration to address complex, multiscale challenges. These benefits, however, obtain only to the extent that effective communication and information exchange occurs between the various groups involved in governance projects (Ostrom, 1990, 2010; McGinnis, 2011; Galaz et al., 2012; Baland and Platteau, 1996; Crona and Hubacek, 2010; Pinkerton, 1989; Andersson and Ostrom, 2008).

The closely related multi-level governance perspective (Hooghe and Marks, 2003) builds on the polycentricity literature's images of flexible governance arrangements by including explicit considerations of governmental levels and multiscale policy problems. Like the literature on polycentric governance, the multi-level governance literature emphasizes the importance of robust relationships of information exchange and collaboration across governmental levels. From this perspective, a central question is under what conditions these important cross-level relationships will form, but the causal mechanisms behind these connections have only recently begun to be theorized, and, as Bache et al. (2015) characterize it, multi-level governance is perhaps best understood as "a 'proto-theory' awaiting further theoretical refinement."

Galaz et al. (2012) provide a starting point for theorizing multi-level governance as a process. They suggest governance systems can evolve from "weak" polycentricity characterized by limited communication networks to a "strong" polycentricity characterized by formalized relationships and common projects. On this account, the increasing institutionalization of relationships resulting from routinizing interactions, developing common knowledge, and building trust can lead to more strongly institutionalized, but still flexible, governance systems.

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