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■ research article

Enabling factors for establishing REDD+ in a context of weak governance

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Reducing emissions from deforestation and forest degradation (REDD+) has emerged as an important carbon governance mechanism. However, forest governance is weak in most REDD+ countries, which undermines efforts to establish REDD+. This study analyses the factors that enable national REDD+ processes in the context of weak governance using a two-step 'qualitative comparative analysis' (QCA) of 12 REDD+ countries. Assuming that actor-related factors can be effective only if certain institutional preconditions are met, six factors were divided into two categories that were analysed separately: institutional setting (pressure from forest-resource shortage; forest legislation, policy, and governance; already initiated policy change) and the policy arena (national ownership; transformational coalitions; inclusiveness of the policy process). The factors were analysed to determine their role in efforts to establish comprehensive REDD+ policies that target transformational change. The results reveal path dependencies and institutional stickiness in all the study countries. Only countries already undertaking institutional change have been able to establish REDD+ policies in a relatively short period – but only in the presence of either high pressure from forest-resource shortages or key features of effective forest legislation, policy, and governance. Furthermore, where an enabling institutional setting is in place, the policy arena conditions of national ownership and transformational coalitions are crucial.

Policy relevance

Although the aim of REDD+ is to provide performance-based payments for emissions reductions, the outcomes in terms of actual emission reductions or co-benefits are not yet observable. Most REDD+ countries are still at the design and implementation stage for policies and measures. Indicators and criteria to measure progress in this phase are required to identify which factors enable or hinder countries' performance in delivering necessary policy change to provide targeted financial incentives to support countries' efforts. This study analyses the factors that shape national REDD+ processes in the context of weak governance using a two-step QCA of 12 REDD+ countries. The results show a set of enabling conditions and characteristics of the policy process under which REDD+ policies can be established. These findings may help guide other countries seeking to formulate REDD+ policies that are likely to deliver efficient, effective, and equitable outcomes.

Keywords: climate change mitigation; developing countries; policy formation; QCA; REDD+

1. Introduction

Reducing emissions from deforestation and forest degradation (REDD+) has emerged as a key international strategy for halting land-use change in developing countries and involving them in climate

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change mitigation efforts (Angelsen, Brockhaus, Sunderlin, & Verchot, 2012; Kanninen et al., 2007). REDD+ is based on the concept of creating incentives for developing countries to protect their forests by placing a financial value on the additional carbon stored in trees or not emitted to the atmosphere.

Central to REDD+ is its strong national-level focus. The aim is to achieve a shift from project-based conservation to nationally led forest conservation. However, REDD+ has not yet realized this shift for various reasons, including delays and obstacles in global climate negotiations, difficulties in establishing carbon markets, and governance challenges in formulating and implementing policies for REDD+ (Angelsen & McNeil, 2012; Pedroni, Dutschke, Streck, & Estrada Porrúa, 2009). Most REDD+ countries are still in the first 'readiness' phase, which involves preparing a national REDD+ strategy through stakeholder consultations, building capacity in measurement, reporting and verification (MRV), and performing demonstration activities (Wertz-Kanounnikoff & McNeill, 2012).

Currently, much of the REDD+ debate is concentrated on experiences from pilot projects (Caplow, Jagger, Lawlor, & Sills, 2011; Cerbu, Swallow, & Thompson, 2011; Hajek, Ventresca, Scriven, & Castro, 2011; Peskett, Schreckenber, & Brown, 2011), the role of REDD+ in climate negotiations (Reinecke, Pistorius, & Pregernig, 2012), or MRV efforts (Fry, 2011; Romijn, Herold, Kooistra, Murdiyarso, & Verchot, 2012). Most national-level studies on REDD+ examine specific aspects such as the mechanism's potential risks and opportunities (Corbera & Schroeder, 2011; Gupta, 2012; Lederer, 2012; Phelps, Guerrero, Dalabajan, Young, & Webb, 2010). Only a few national-level studies try to take a more comprehensive look at national processes and governance (Di Gregorio, Brockhaus, Cronin, & Muharrom, 2012; Fosci, 2013). This research gap is inconsistent with the importance of sound national-level frameworks and policy processes for achieving REDD+ implementation that is efficient, effective, and equitable – the so-called '3Es'. Such national frameworks and processes are crucial in accounting for and controlling domestic emissions from deforestation and forest degradation, managing REDD+ funds and for building a stronger sense of domestic ownership (Wertz-Kanounnikoff & Angelsen, 2009). However, most REDD+ countries have weak governance structures. This weakness constitutes one of the main challenges for the mechanism's implementation, carbon-effectiveness, cost-efficiency, and equity (Fosci, 2013).

A comprehensive analysis of the national institutional and actor-related factors that enable the successful formulation of REDD+ policies is presented. A qualitative comparative analysis (QCA) of 12 REDD+ countries (Bolivia, Brazil, Burkina Faso, Cameroon, Democratic Republic of Congo (DRC), Indonesia, Mozambique, Nepal, Peru, Papua New Guinea (PNG), Tanzania, and Vietnam) is employed to identify the combinations of factors that enable or hinder efforts to establish the necessary national policy framework for 3E REDD+ implementation. The study countries represent forest-rich tropical developing or emerging countries that exhibit political commitment to REDD+ but also have powerful drivers for deforestation, weak multilevel governance, low cross-sectoral horizontal coordination, and a lack of technical and administrative capacity. To support the successful development and implementation of REDD+ policies in these countries, it is necessary to understand which preconditions need to be met and which settings and factors facilitate enabling policy processes for a 3E REDD+.

The article begins by briefly describing the theoretical considerations underpinning the analysis. This is followed by a presentation of the QCA approach used to compare REDD+ processes. The findings are then presented, followed by a discussion of the enabling factors for REDD+.

2. Institutional setting and the policy arena for national REDD+ policies

REDD+ is more than a mechanism for providing economic incentives to reduce deforestation and forest degradation; rather, it has the potential to induce transformational change that overcomes business-as-usual practices. 'Transformational change' is understood here as a shift 'in discourse, attitudes, power relations, and deliberate policy and protest action that leads policy formulation and implementation away from business as usual policy approaches that directly or indirectly support deforestation and forest degradation' (Brockhaus & Angelsen, 2012, pp. 16–17). Such transformational change affects not only a narrow set of regulations, but also a broad range of institutional patterns and behaviours of actors. The aim of this article is to identify which preconditions are necessary at the national level for REDD+ to achieve such transformational change.

Underpinning the present analysis is the theoretical assumption that both institutional and agency factors affect the direction of REDD+ policies (see also Brockhaus, Di Gregorio, & Mardiah, 2013; Corbera & Schroeder, 2011). Therefore, the analysis considers the institutional setting on the one hand and the actor-related processes in the policy arena on the other. Here, 'institutional setting' is defined as 'the formal and informal regulations, rules and norms that are established over time and that are not easily changed or transformed' (Baumgartner, Jones, & Wilkerson, 2011; North, 1990; Ostrom, 1990; Scharpf, 2000). The other key concept, 'the policy arena', is viewed as being framed by institutions but shaped by the actions of the actors, whether individuals, communities, organizations or networks, and characterized by more or less hierarchical or inclusive processes, involving a range of powerful actors, which can foster or prevent certain policies and influence policy formulation (Arts, 2012; Corbera & Schroeder, 2011; Scharpf, 1997).

From a neo-institutionalist perspective, the development of national REDD+ policies is seen as path-dependent on past policies and existing institutions. Path dependency explains the difficulties in achieving institutional change, even in the presence of political will for reforms. Historical experiences as well as policy and institutional legacies frame present actions. Behaviour or policies that formerly proved successful, that are entrenched, or that are in the interest of powerful actors are deployed to resist change in the face of new challenges and to protect vested interests and business-as-usual practices (Pierson, 2000; Thelen, 1999). These circumstances seem to be common for the national implementation of any international programme (Barr, Dermawan, Purnomo, & Komarudin, 2010; Victor, Raustiala, & Skonikoff, 1998). At the same time, institutions can also provide scope for path change, because they define the framework within which actors make policy choices, their available resources, and the ways in which they can interact (Scharpf, 1997). In seeking to address the drivers of deforestation and forest degradation, REDD+ necessarily challenges multiple established institutions and policies, and hence is likely to encounter resistance from existing institutional logics and actors. Such path-dependencies can, for example, be related to tax regulations that provide incentives for deforestation, public funding for infrastructure development, or corruption leading to non-compliance with state regulations (Di Gregorio et al., 2012; Indrarto et al., 2012; Pham, Moeliono, Hien, Tho, & Hien, 2012). Therefore, any analysis of the institutional context in REDD+ countries must also investigate whether there is scope for institutional change. When seeking to understand how and why change occurs, it is important to also look at the policy process and the roles that various actors play, that is, at the policy arena. Actor-centred approaches tend to be based on rational choice theory, which assumes that individuals make choices (political or otherwise) based on the

highest expected individual utility or return (Simon, 1955). Nevertheless, institutional approaches argue that actors' routines, values, and ideas are framed by the institutional context, which provides scope for certain modes of interaction (Scharpf, 1997). Within this scope, actors have the capacity to shape policy processes and development (Long, 2001). Indeed, in the REDD+ policy arena, multiple actors from various levels of governance are shaping the policy formulation (Hiraldo & Tanner, 2011).

Based on these theoretical considerations, factors studied in this analysis are divided into two categories: institutional setting and actor-based processes in the policy arena. These are analysed as separate but interdependent sets of conditions that, in their specific configuration, can be necessary or sufficient for establishing REDD+.

3. Methods

This study employs QCA (Ragin, 1987, 2000, 2008; Rihoux & Ragin, 2009; Schneider & Wagemann, 2012), which is designed for comparisons of a small to intermediate number of cases. The aim of QCA is to enable systematic cross-case comparison without neglecting case complexity, thus allowing for modest, medium-range generalization and theorizing.

In QCA, each case is understood as a specific combination (or 'configuration') of factors, called 'conditions'. QCA is based on the concept of multiple conjunctural causation, meaning that (1) most often, not one factor (called condition) but a combination of factors will lead to the outcome; (2) different combinations of conditions can produce the same outcome (equifinality); and (3) one condition can have different impacts on the outcome, depending on its combination with other factors and the context (Rihoux, 2007, p. 367).

The values of the causal conditions and outcomes are summarized in a data matrix, called the 'truth table'. In crisp-set QCA (csQCA), as used here, all conditions are assessed in a binary form as either absent (0) or present (1) for the specific case. In presenting the results, the truth table shows all theoretically possible combinations and their occurrence in the cases. In a configuration, the use of capital letters denotes the presence of a condition, and small letters indicate its absence. The threshold between absence and presence has to be defined theoretically and assessed based on case knowledge. The configuration formula is obtained through the application of Boolean algebra, in which '+' means 'or' and '*' means 'and'. For example, ABc ($A*B*c$) denotes the presence of both A and B and the absence of C. Note that absence is not assessed as irrelevant but is measured and included in the analysis.

The current analysis uses the two-step fuzzy-set QCA (fsQCA) developed by Schneider and Wagemann (2006), but as csQCA, thus with only binary codings.¹ Schneider and Wagemann (2006) differentiate between remote and proximate conditions. Remote conditions are spatiotemporally distant from the outcome, are stable over time, and cannot be easily changed by actors – in sum, what is often called 'context'. By contrast, proximate conditions are spatiotemporally close to the outcome, vary over time, and can be easily changed by actors. In this analysis, remote conditions are those in the institutional setting and proximate conditions those in the policy arena. In the first step of a two-step QCA, only the remote conditions are analysed in order to identify 'outcome-enabling conditions'. One or several configurations can emerge. In the second step, each of these configurations is analysed in conjunction with the proximate factors. Thus, several analyses take place in parallel, but only with those cases that exhibit the relevant, i.e. outcome-enabling, context. This approach thus allows for inferences in which factors, or a set of factors, play a role if certain contextual conditions are given.

TABLE 1 Countries included in the comparative analysis

Africa	South America	Asia and Oceania
Burkina Faso	Bolivia	Indonesia
Cameroon	Brazil	Nepal
DRC	Peru	PNG
Mozambique		Vietnam
Tanzania		

The present QCA forms part of a global comparative study on REDD+ (GCS-REDD), led by the Center for International Forestry Research (CIFOR) and currently under way in 12 countries in South America, sub-Saharan Africa, Asia, and Oceania (Table 1). Expert country teams with in-depth case knowledge conducted studies of these countries (e.g. Indrarto et al., 2012; Pham et al., 2012). The separate analysis of remote and proximate factors in the two-step QCA here corresponds to the two main research foci in national REDD+ processes: analysis of the institutional context and of the policy arena (Brockhaus & Di Gregorio, 2012).

To prepare for the analysis, data gathered by the country teams during the past two years were summarized. A preliminary list of potentially important factors was compiled during a workshop with participants from several GCS-REDD country teams. This list formed the basis for an online survey completed by project researchers. This survey, although not representative, served to elicit experts' views on which factors were relevant for cross-country comparison, and why so. Following reviews of the REDD+ country studies, the number of conditions was reduced (overlapping factors were merged, related factors combined into meta-factors, and some factors were excluded based on theoretical expectations or case knowledge). The relevance of the final list of 15 factors was verified once again by the country experts. This process captured the comparable quintessence of two years of intensive case-specific research by almost 50 experts.

For the comparative analysis the list was reduced to eight factors using the same procedure as above, and these were further operationalized by indicators that were established in a consultative process with international experts of REDD+. To allow cross-checking of results, this final assessment took place in a joint workshop attended by experts from the GCS-REDD country teams. Each country team had at least two group members, who discussed and assessed the indicators and presented the final results in the plenary with all country teams present. The threshold between 0 and 1 assessment for each factor was set through careful examination of the characteristics of the factor, and also drew on substantial contextual knowledge of case countries. As most of the countries share quite similar governance characteristics, thresholds needed to be set in a way that the – sometimes small but decisive – differences between the countries could be observed and accentuated so that the specific country features could be revealed. Finally, six factors out of the eight were identified as conditions having a role in determining the success or failure in achieving 3E REDD+ policy outputs, and the remaining two, together with a few important earlier factors that were similar across all countries, formed the joint context. These data formed a reliable and valid starting point for the QCA (Rihoux & De Meur, 2009, p. 48). The analysis was conducted using the software Tosmana (Cronqvist, 2007).

4. QCA of factors affecting national REDD+ policies

4.1. Outcome

The REDD+ mechanism has not evolved as quickly as anticipated and is in a constant state of change. To date, major national-level policy outputs have addressed the establishment of new institutions, procedures, and capacity building, while concrete policy formulation and implementation have been limited (Brockhaus et al., 2013). Therefore, the outcome is defined here as the ‘establishment of comprehensive policies targeting transformational change in the REDD+ policy domain’ that is likely to lead to successful 3E REDD+ implementation.

This study therefore assesses whether adequate measures for establishing the preconditions for REDD+ are being taken, whether institutions and procedures are in place, and whether REDD+ policies have been adopted. The outcome is defined in Table 2, and its indicators described.

The assessment and analysis reveal little evidence of this outcome in REDD+ countries. In many of the countries, national strategy is still in development. Coordination bodies for REDD+ are in place in Brazil, Burkina Faso, Cameroon, DRC, Indonesia, Mozambique, Tanzania, and Vietnam. Although some countries are developing new MRV systems or expanding existing ones, in general these are not yet adequate for a results-based mechanism such as REDD+. Overall, only Brazil, Indonesia, and Vietnam have at least two indicators present, achieving outcome 1 (present).

4.2. Joint context

Although the 12 countries analysed here differ in many respects, they do have in common several factors that are important for the success or failure of REDD+ (see also Pedroni et al., 2009; Phelps et al., 2010), as follows:

TABLE 2 Operationalization of the outcome

Definition of the outcome: establishment of comprehensive policies targeting transformational change in the REDD+ policy domain			
<i>Presence</i>	<i>Absence</i>	<i>Indicators of presence</i>	<i>Evaluation</i>
New institutions, procedures, and capacity-building measures are established by committed actors	New institutions and procedures are not established or are met with resistance, thus undermining their capacity to function	MRV system developed Coordination body established REDD financing used effectively	Two or more indicators of presence = 1
These institutions and procedures support concrete policy formulation and outputs	REDD+ policy formulation remains fragmented or is undertaken mainly by external actors	National strategy in place Grievance procedures or other mechanisms to enhance accountability in REDD+ systems established	Zero or one indicator of presence = 0
Such policies and outputs are built on a broad societal consensus for change	Business-as-usual approaches dominate media and politics		

- All countries, with the exception of Brazil, have serious shortcomings in effective horizontal, cross-sectoral coordination mechanisms, which are necessary for ensuring the coordination of REDD+-related activities and processes among all relevant ministries.
- Multilevel governance systems – with decentralized administration and forest management, needed both for the competence and capacity of local agencies and for vertical coordination between central, provincial, and local levels – are rather weak in most countries.
- Most countries lack adequate professional and financial capacity in forest administration and for MRV activities.
- Almost all countries (the exceptions are Burkina Faso and Nepal) have powerful drivers of deforestation (i.e. forest-related sectors have a high economic significance and are well integrated in global markets), which translates into resistance to change from powerful interests.
- Nevertheless, political leadership in most of the countries demonstrates a commitment to REDD+, as expressed by regular pro-REDD+ statements or engagement with the REDD+ policy arena at the national level. The exception is Bolivia, which is opposed to REDD+ in its present form and is instead presenting alternative approaches to forest-related climate change mitigation (Gobierno de Bolivia, 2008).

Overall, these are forest-rich tropical developing or emerging countries with a political commitment to REDD+ but with powerful drivers of deforestation, weak multilevel governance, low cross-sectoral horizontal coordination, and inadequate capacity – all characteristics that hinder the quick implementation of 3E REDD+. What conditions are therefore necessary for these countries to succeed in moving forward with an effective, efficient, and equitable REDD+?

4.3. Institutional setting

Drawing on theoretical considerations, and the inductive process described above, three hypothetical remote conditions for REDD+ are defined.

- *Pressure from shortage of forest resources (PRES)*: A large proportion of forests is under pressure from economic activity due to the institutionalized patterns of forest use, and might soon become unable to meet needs or meet usage interests. We expect that if a country belongs to the group of countries in which forests are under high pressure, it will face a stronger need to engage in active forest protection and overcome path dependency and resistance.
- *Key features of effective forest legislation, policy and governance (EFF)*: These comprise the existence of a legal framework that defines tenure, use, and management rights, and includes both formal and customary regulations as well as the enforcement of laws and policies related to sustainable forest management and participation by national and local authorities and the degree of compliance of forest users. We expect that achieving REDD+ outcomes requires that certain key elements of a sound legal forestry framework, featuring clearly defined rights and management regulations, are in place and enforced to some extent.
- *Already initiated policy change (CHA)*: Policy change addressing climate change and aimed at departing from business as usual developed independently of REDD+ is already under way; e.g. Nationally Appropriate Mitigation Actions (NAMAs), anti-deforestation programmes, low-carbon

development strategies, and payment for environmental services (PES) schemes. We expect that effective REDD+ strategies can emerge more easily if governments are already successfully implementing policies aimed at departing from business-as-usual practices in the forest economy and thus provide scope for an institutional path change.

The presence and absence of these conditions and their indicators for assessment are defined in Table 3.

Outcomes of the analysis for the institutional setting for the 12 study countries are summarized in the truth table in Table 4.

As Table 4 shows, all possible combinations of institutional factors arise, only three of which lead to a positive outcome (REDD = 1):

$$\text{PRES}^*\text{eff}^*\text{CHA}(\text{Indonesia}) + \text{pres}^*\text{EFF}^*\text{CHA}(\text{Vietnam}) + \text{PRES}^*\text{EFF}^*\text{CHA}(\text{Brazil}).$$

Because the use of lower-case letters denotes the absence of the factor and the use of upper case denotes the presence of the factor, using Boolean logic, these can be reduced to:

$$\text{EFF}^*\text{CHA} + \text{PRES}^*\text{eff}^*\text{CHA}.$$

Figure 1 shows all configurations as a Venn diagram. The lined parts show the configurations with outcome 1, and the grid areas are those that demonstrate contradictory results (outcome 0 and 1).

As shown by the cases of Brazil and Vietnam, comprehensive REDD+ policies targeting transformational change are possible where key features of effective forest legislation, policy, and governance are in place, and policy changes have already been initiated. If these conditions are in place, pressure from shortage of forest resources is not relevant. Countries that have some of the key elements of forest legislation, policy, and governance but have not yet initiated policy change, such as Nepal and Cameroon, do not have strong enough enabling conditions to establish comprehensive REDD+ policies. By contrast, DRC, Peru, and Indonesia have initiated policy changes but do not have the necessary key features of forest legislation, policy, and governance; of these, only in Indonesia – with its additional pressure of forest shortage – can comprehensive REDD+ policies be established. These findings indicate that, when these cases are viewed together, having policy changes under way is a necessary but not sufficient institutional condition for REDD+.

As seen in the truth table (Table 4), the outcome for most countries is 0 – hence ‘redd’ – which is obtained through the following configurations:

$$\text{pres}^*\text{eff}^*\text{cha} + \text{PRES}^*\text{eff}^*\text{cha} + \text{PRES}^*\text{EFF}^*\text{cha} + \text{pres}^*\text{eff}^*\text{CHA} + \text{pres}^*\text{EFF}^*\text{cha} + \text{PRES}^*\text{EFF}^*\text{CHA}.$$

This can be reduced to:

$$\text{pres}^*\text{eff} + \text{PRES}^*\text{cha} + \text{pres}^*\text{cha} + \text{PRES}^*\text{EFF},$$

TABLE 3 Operationalization of conditions for the institutional setting

Pressure from shortage of forest resources (PRES)			
<i>Presence</i>	<i>Absence</i>	<i>Indicators</i>	<i>Evaluation</i>
Forests are under pressure from high deforestation rate	Abundant or recovering forest resources with a low to medium or negative (reforestation) deforestation rate	Forest transition stage ^a Deforestation rate	Forest transition stage 2 or 3 and deforestation rate above 0.5% annually = 1 Forest transition stage 1, 4 or 5 and deforestation rate below 0.5% annually = 0
Key features of effective forest legislation, policy and governance (EFF)			
<i>Presence</i>	<i>Absence</i>	<i>Indicators of presence</i>	<i>Evaluation</i>
A sound and clear legal framework with clearly assigned rights and management regulations is in place	Tenure and rights are in many respects unclear and contested	Sound and consistent legal forestry framework and policies	Two or more indicators present = 1
Laws and policies are at least partly effectively implemented by national and local administrations, which have at their disposal a minimum of enforcement mechanisms and implementation capacity	There are unresolved contradictions between formal and customary law There are no adequate laws and policies, or they exist but are ineffective because of lack of implementation mechanisms and enforcement capacity and/or elite capture and corruption	Effective implementation and enforcement mechanisms Capacity-building efforts for implementing agencies High compliance with the law by citizens and businesses Awareness and effective use of rights Low level of corruption and clientelistic patterns undermining policy implementation	Zero or one indicator present = 0
Already initiated policy change (CHA)			
<i>Presence</i>	<i>Absence</i>	<i>Indicators of presence</i>	<i>Evaluation</i>
The government has already formulated and is implementing policy strategies on climate change (e.g. NAMAs) and deforestation, or a low-carbon development strategies or/and PES schemes are already established independently from REDD policies	The government has not yet formulated advanced policy strategies on climate change (e.g. NAMAs) and deforestation or a low-carbon development strategy, or existing policies are highly insufficient or not implemented at all; no PES schemes have been established	Evidence of implementation of policy strategies in related fields (e.g. one or more of the following: NAMA, PES, deforestation, low-carbon development)	Present = 1 Absent = 0

^aThe forest transition theory defines five stages in forest cover change: (1) high forest cover, low deforestation rate; (2) high forest cover, high deforestation rate; (3) low forest cover, high deforestation rate; (4) low forest cover, low deforestation rate; (5) low forest cover, negative deforestation rate (Angelsen et al., 2009, p. 4).

TABLE 4 Truth table for the institutional setting conditions

Conditions for the institutional setting			Outcome	Cases
PRES	EFF	CHA	REDD	Country
0	0	0	0	PNG
1	0	0	0	Burkina Faso, Mozambique, Tanzania
1	1	0	0	Cameroon
0	0	1	0	DRC, Peru
1	0	1	1	Indonesia
0	1	0	0	Nepal
0	1	1	1	Vietnam
1	1	1	C	Brazil (1), Bolivia (0)

Notes: 1, present; 0, absent; C, contradictory result.

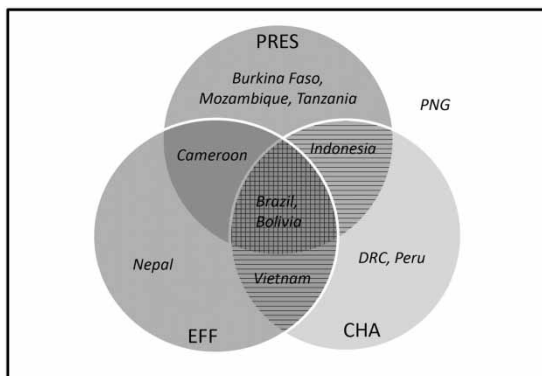


Figure 1 Observed configuration of the three remote conditions

and further to:

$$\text{pres}^* \text{eff} + \text{cha} + \text{PRES}^* \text{EFF}.$$

This indicates that, for many countries, the absence of having already introduced policy changes is the decisive factor. The presence of existing policy change is irrelevant in cases characterized by the presence of both pressure from shortage of forest resources and key features of forest legislation, policy, and governance (Bolivia and Cameroon), where Bolivia, despite having already initiated policy changes, has not achieved the outcome 'REDD'. In countries with neither pressure from shortage of forest resources nor key elements of effective forest legislation, policy, and governance (e.g. DRC and Peru), the presence of

prior policy change alone has not been sufficient to enable the establishment of comprehensive REDD+ policies. This again confirms that having already initiated policy changes is not by itself a sufficient institutional condition; it needs to be supplemented by at least one other condition, either pressure from shortage of forest resources or key features of effective forest legislation, policy, and governance.

An analysis of necessity showed that $REDD = (PRES + EFF) * CHA$; i.e. previously initiated policy change is a necessary condition, while forest pressure and key features of effective forest legislation, policy, and governance can substitute for one another.

Only one configuration leads to a contradictory outcome: $PRES * EFF * CHA$. For Brazil this is positive and for Bolivia it is negative (Figure 1). One strategy for dissolving contradictions is to add conditions that, when they show different values, resolve the contradiction (Schneider & Wagemann, 2012, p. 120). This is what we will do in step two, by adding the proximate conditions. Therefore, we keep the contradictory row for the remote factors in both minimization procedures. This shows that the institutional conditions alone cannot explain the outcome 'REDD'; rather, conditions for the institutional setting must be analysed in combination with conditions for the policy arena. Only conditions for the policy arena can reveal when actors can effectively use an enabling institutional setting to achieve REDD+.

4.4. Policy arena

Whereas the institutional setting provides key conditions for an enabling context, actions by political actors shape the policy arena and the processes that lead to transformational change within that context. Drawing on theoretical considerations, previous studies (Corbera & Schroder, 2011; Di Gregorio et al., 2012; Gupta, 2012; Wong & Surkin, 2008), and the inductive consultation process, three hypothetical proximate conditions on the policy arena, and its impact on REDD+, were defined in order to find out which of them are necessary to accomplish the outcome-enabling configurations and which combinations provide for a sufficient configuration for REDD+:

- *National ownership* (OWN): National actors are dominant in shaping and supporting the policy discourse on REDD+ and are involved in the development of policy documents. The country is financially committed to REDD+. We expect that REDD+ policy documents are more likely to be translated into effective and sustainable activities if REDD+ policy processes are led by committed national actors and not driven only by international actors.
- *Transformational coalitions* (COAL): Policy actors and coalitions are present that can lead policy discussion and formulation in new directions, away from business as usual. Agreement among political actors on the importance and content of REDD+ facilitates coalition building. We assume that, given the dominance of business as usual in the forestry domain, domestic pro-REDD+ political actors must be able to form coalitions, influence the direction of policy formulation, and lead the political discourse away from business as usual and towards transformational change.
- *Inclusiveness of the policy process* (INCL): There is a high degree of participation and consultation of key stakeholders (including private sector), civil society, and indigenous people. Legal provisions supporting the right of indigenous people and communities to participate are in place. We expect that stakeholder participation in REDD+ policy processes ensures that multiple interests are taken into account and reduces resistance to implementation of REDD+. Inclusion of stakeholders in the policy process is therefore crucial for legitimacy and sustainability.

The presence and absence of these conditions and their indicators for assessment are defined in Table 5.

Table 6 shows the outcomes of the analysis for both the institutional setting and the policy arena.

TABLE 5 Operationalization of conditions for the policy arena

National ownership (OWN)			
<i>Presence</i>	<i>Absence</i>	<i>Indicators of presence</i>	<i>Evaluation</i>
Pro-REDD+ media statements by government (national and subnational)	Anti-REDD+ media statements by national state actors and/or REDD+ statements by international actors dominate	Regular pro-REDD+ statements by government appear in the media	All three indicators present = 1
National research and NGO actors dominate policy discourse (media analysis)	Policy formulation is mainly by foreign actors	REDD+ policy formulation is led by national political institutions	Fewer than three indicators present = 0
Engagement of national political institutions in REDD+ policy formulation	Financial incentives from donors are main reason for REDD+ implementation	Foreign donors/actors have only a minor/advisory role and agenda in REDD+ policy formulation	
Donor agendas do not dominate process	No budget allocation to REDD+		
Budget allocation to REDD+			
Inclusiveness of the policy process (INCL)			
<i>Presence</i>	<i>Absence</i>	<i>Indicators of presence</i>	<i>Evaluation</i>
Key stakeholders, including civil society, private sector, and indigenous people (if applicable) participate or are at least consulted during the REDD+ process	There are no formal mechanisms for the participation of or consultation with key stakeholders, civil society, indigenous people, and the private sector, or any mechanisms are not applied	Key stakeholders (civil society, private sector, indigenous people) participate or are at least consulted during the REDD+ process	Two or more indicators present, including one of the last two indicators = 1
There are formal participation or consultation mechanisms and the views expressed by stakeholders are considered in REDD+ policy documents	Stakeholders' views are not represented in REDD+ policy documents	Formal and effective participation mechanisms are developed and present	Zero or one indicator present, or neither of the last two indicators = 0
		The results of and views expressed during the consultation process are included in REDD+ policy documents	
		There is knowledge about REDD+ at the local level.	

(Continued)

TABLE 5 Continued

Transformational coalitions (COAL)			
<i>Presence</i>	<i>Absence</i>	<i>Indicators of presence</i>	<i>Evaluation</i>
Existence of coalitions of drivers of change with room to manoeuvre in the political structures and impact on the discourse	No observable coalitions of drivers of change, or any present are too marginal to influence policy making and are not visible in the political discourse on REDD+	Notions or existence of coalition building among actors supporting REDD+ policies (e.g. umbrella organization, regular meetings, joint statements, personal relations)	Two or more indicators present, including the first indicator = 1
Policy actors and coalitions calling for transformational change are more prominent in the media than those supporting the status quo	Media and policy circles are dominated by coalitions supporting the status quo and business as usual	There are drivers of change (policy actors that lead discourse in pro-REDD+ direction) both inside and outside government institutions	Zero or one indicator present or first indicator absent = 0
		Policy actor coalitions calling for substantial political change in forest policies are more prominent in media than those supporting the status quo	
		Pro-REDD+ policy actors have good access to political decision makers (e.g. invited to expert hearings, members in advisory councils)	

Accordingly, the second step in the two-step QCA is to identify which conditions for the policy arena must be combined with the two configurations of institutional conditions that enable effective REDD+ outcomes (only cases that demonstrate the enabling context are included). As we have only a small number of cases, the number of logical remainders (possible combinations that are not observed) is high. Nevertheless, as recommended by Schneider and Wagemann (2012, p. 254), we do not include assumptions about these remainders in order to maintain high consistency. Therefore, we do not strive to make wider generalizations, but precise descriptions of the empirically observed configurations. The configurations for EFF*CHA are shown in Table 7.

The following sufficient configurations for the outcome 'REDD' are observed:

$$\text{EFF*CHA*OWN*COAL*INCL(Brazil)} + \text{EFF*CHA*OWN*COAL*incl*(Vietnam)},$$

TABLE 6 Truth table for the conditions for both institutional setting and the policy arena

Case	Institutional setting			Policy arena			Outcome
	PRES	EFF	CHA	OWN	COAL	INCL	REDD
Bolivia	1	1	1	0	0	0	0
Brazil	1	1	1	1	1	1	1
Burkina Faso	1	0	0	0	0	0	0
Cameroon	1	1	0	0	0	0	0
DRC	0	0	1	0	1	1	0
Indonesia	1	0	1	1	1	0	1
Mozambique	1	0	0	1	1	1	0
Nepal	0	1	0	0	1	1	0
Peru	0	0	1	1	1	1	0
PNG	0	0	0	0	1	0	0
Tanzania	0	0	0	0	1	1	0
Vietnam	0	1	1	1	1	0	1

which can be further reduced to $EFF*CHA*OWN*COAL*$ (Brazil and Vietnam).

The Venn diagram in [Figure 2](#) illustrates the observed configurations. The lined areas are the combinations with outcome 1.

This finding indicates that comprehensive REDD+ policies can be established when a country has not only key elements of effective forest legislation, policy, and governance and some policy change under way, but also national ownership of REDD+ and pro-REDD+ coalitions. The need for the policy arena conditions to supplement the institutional conditions is exemplified by Bolivia: the same institutional conditions can be found there, but it lacks both national ownership and pro-REDD coalitions.² It can be observed that inclusiveness of the policy process is not necessary: as seen, both Brazil and Vietnam have outcome 1, but only in Brazil has the process been inclusive.

Only Indonesia has the alternative combination of institutional conditions that leads to outcome 1: $PRES*eff*CHA$.

[Table 8](#) shows the results of the analysis for the policy arena conditions in Indonesia.

TABLE 7 Truth table for conditions for the policy arena and $EFF*CHA$

Enabling institutional condition	Conditions for the policy arena			Outcome	Cases
$EFF*CHA$	OWN	COAL	INCL	REDD	Country
1	1	1	1	1	Brazil
1	1	1	0	1	Vietnam
1	0	0	0	0	Bolivia

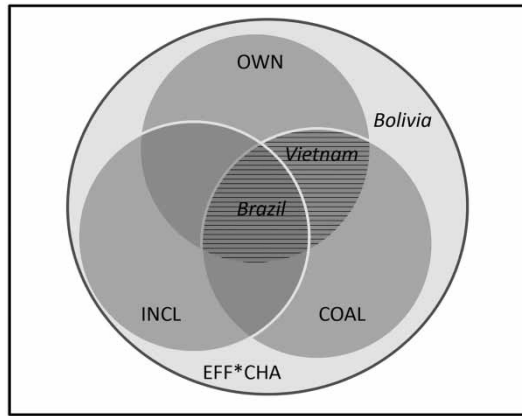


Figure 2 Observed configuration for EFF*CHA and the three proximate conditions

TABLE 8 Truth table for conditions for the policy arena and PRES*eff*CHA

Enabling institutional condition	Conditions for the policy arena			Outcome	Cases
	OWN	COAL	INCL	REDD	Country
1	1	1	0	1	Indonesia

As seen, the configuration for Indonesia is PRES*eff*CHA*OWN*COAL*incl. Like Vietnam, Indonesia does not have an inclusive policy process, but does have strong ownership and transformational coalitions. In combination with having previously initiated policy change and pressure from shortage of forest resources, these conditions are sufficient for Indonesia to achieve the outcome, even in the absence of the most basic features of effective forest governance.

5. Discussion

Only 3 of the 12 countries achieved outcome 1 (Brazil, Indonesia, and Vietnam), and these are divided into two sets of enabling remote conditions, so only limited inferences can be drawn from their comparison. In step two of the analysis, many possible combinations of conditions were not observed. Nevertheless, by comparing the configurations of these successful cases with those of unsuccessful cases, it is possible to draw some clear inferences about the necessary conditions and different sets of sufficient configurations that are necessary if comprehensive REDD+ policies are to be formulated and implemented.

A crucial institutional factor is having already initiated policy changes, which is a necessary part of both sufficient configurations. Especially in a context of overall weak law enforcement and governance, existing policy change efforts can smooth the path for REDD+ (see also Gupta, 2012). For example, in Vietnam, a path change from business-as-usual approaches was initiated with the launch of pilot PES schemes in 2008. The government has since established clear links between these policies and REDD+ policies (Pham et al., 2012). Nevertheless, the present analysis shows that this factor alone is not sufficient to enable comprehensive REDD+ policies, but must be accompanied by either key elements of effective forest legislation, policy, and governance (as in Brazil and Vietnam) or by high pressure from shortage of forest resources (as in Indonesia). As the case of Peru shows, even in the presence of national ownership and transformational coalitions, REDD+ policy development will not be successful if no enabling institutional preconditions other than prior policy change are in place.

Among the policy arena conditions, national ownership and transformational coalitions are necessary conditions and, when in combination with both outcome-enabling remote configurations, they are sufficient for outcome 1. All the successful countries have strong national ownership over their REDD+ policy processes (Clements, 2010; Di Gregorio et al., 2012). Indonesia, for example, has established a national REDD+ Task Force, which is located in the President's Office, and the incumbent president, President Susilo Bambang Yudhoyono, often makes pro-REDD+ media statements. It is important to stress that national ownership does not mean that donors have no involvement but that national institutions take the lead. In Indonesia and Vietnam, which have strong ownership over REDD+, the process is being conducted in close cooperation with international donors (Indrarto et al., 2012; Pham et al., 2012). All three successful cases are also characterized by the presence of transformational coalitions. In Brazil, for example, the Amazon Environmental Research Institute (IPAM) promotes coalition building and engages federal and state actors in REDD+. This coalition has supported the Amazonian states of Acre and Mato Grosso in developing their REDD+ approaches and is involved in the development of a national framework on REDD+. In Indonesia, coalition building takes place among civil society actors, and these actors are calling for transformational change and challenging the government's REDD+ policies because they feel that the policies are too closely aligned with business as usual. Dai (2007) also notes that civil society has an increasingly important role in national implementation of any international programme. However, as the cases of Peru and Mozambique show, having ownership and transformational coalitions will not lead to successful outcomes if the necessary institutional preconditions are not in place.

The present analysis indicates that the inclusiveness of policy processes plays only a minor role (cf. Di Gregorio et al., 2012). Countries that have centralized and relatively authoritarian systems (e.g. Vietnam) or that have strong national leadership over the process (e.g. Indonesia) have successfully established the necessary foundations for effective REDD+, even though the process is not inclusive. However, inclusiveness may prove to be crucial for the later implementation of REDD+ policies and for the sustainability and equity of their outcomes.

6. Conclusions

This analysis represents the first attempt to use qualitative comparative analysis (QCA) to study national reducing emissions from deforestation and forest degradation (REDD+) policy

development. Using factors identified in previous studies and corroborated in fieldwork as influential, this study systematically translates incidental evidence into generalizable inferences for forest-rich tropical developing or emerging countries that have a political commitment to REDD+ but also powerful drivers of deforestation, weak multilevel governance, low cross-sectoral horizontal coordination, and weak capacity. Path dependencies and institutional stickiness are apparent in all REDD+ countries, and often hamper efforts to implement the policy changes needed to achieve successful REDD+ outcomes. Only those countries in which institutional change has already been initiated have been able to establish REDD+ policies in a relatively short time period. Even in these cases, however, this had to be accompanied by either high pressure from shortage of forest resources or key features of effective forest legislation, policy, and governance. In the policy arena, the actor-related factors of national ownership and transformational coalitions proved to be crucial, but could only be effective in an enabling institutional setting. The results of this study show that, even under conditions of weak governance, REDD+ policies can be established if certain enabling institutional conditions are in place and if the policy process is based on strong national ownership and supported by transformational coalitions. These findings may help guide other countries seeking to formulate REDD+ policies that are likely to deliver efficient, effective, and equitable outcomes.

This analysis does have some limitations. In addition to the general problem of having a large number of conditions but only a few cases – which the two-step approach was intended to minimize – the small number of cases with outcome 1 considerably constrains the interpretation of results. This limited empirical diversity minimizes the scope for generalizing these results. Only when more cases become available – that is, when more countries make progress with national REDD+ policies – will it be possible to refine our understanding. In particular, it will be interesting to analyse if and how countries with less enabling institutional settings will proceed. For better understanding of the complex realities and the uniqueness of each national context for REDD+, future analysis should focus on the interdependencies of the identified factors in successful countries.

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Notes

1. Schneider and Wagemann used the two-step approach for fsQCA, but they view the dichotomous conditions of csQCA as a variant of fsQCA. See also Mannewitz (2011).
2. Bolivia has strong national ownership over its own REDD+ approach, but the country is opposed to the international REDD+ mechanism in its current form.

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