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■ research article

REDD+, transformational change and the promise of performance-based payments: a qualitative comparative analysis

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Reducing emissions from deforestation and forest degradation (REDD+) has emerged as a promising climate change mitigation mechanism in developing countries. This article examines the national political context in 13 REDD+ countries in order to identify the enabling conditions for achieving progress with the implementation of countries' REDD+ policies and measures. The analysis builds on a qualitative comparative analysis of various countries' progress with REDD+ conducted in 12 REDD+ countries in 2012, which highlighted the importance of factors such as already initiated policy change, and the presence of coalitions calling for broader policy change. A follow-up survey in 2014 was considered timely because the REDD+ policy arena, at the international and country levels, is highly dynamic and undergoes constant evolution, which affects progress with REDD+ policy-making and implementation. Furthermore, we will now examine whether the 'promise' of performance-based funds has played a role in enabling the establishment of REDD+. The results show a set of enabling conditions and characteristics of the policy process under which REDD+ policies can be established. The study finds that the existence of broader policy change, and availability of

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performance-based funding in combination with strong national ownership of the REDD+ policy process, may help guide other countries seeking to formulate REDD+ policies that are likely to deliver efficient, effective and equitable outcomes.

Policy relevance

Tropical forest countries struggle with the design and implementation of coherent policies and measures to reduce emissions from deforestation and forest degradation. Evidence on which factors and configurations are crucial to make progress towards these challenging policy objectives will be helpful for decision makers and practitioners at all levels involved in REDD+. Key findings highlight the importance of already initiated policy change, and the availability of performance-based funding in combination with strong national ownership of the REDD+ process. These findings provide guidance to REDD+ countries as to which enabling conditions need to be strengthened to facilitate effective, efficient and equitable REDD+ policy formulation and implementation.

Keywords: avoided deforestation; climate change policies; country studies; developing countries; international comparison; REDD

1. Introduction

REDD+ shows promise as a climate change mitigation mechanism in developing countries. A number of countries are now at different phases in the process of realizing REDD+, from policy design and technical readiness activities to actual implementation of policies and measures, with the anticipation of results-based payments in the future (Meridian Institute, 2009). Overall progress has been much slower than expected (Angelsen, 2013). National policy outcomes in terms of actual emission reductions or achieved co-benefits are, for the most part, not yet observable, nor measured at a large scale (Brockhaus & Di Gregorio, 2014; Sills et al., 2014; Minang et al., 2014). With the conclusion of REDD+ negotiations at the level of the United Nations Framework Convention on Climate Change (UNFCCC) during the 42nd session of the Subsidiary Body for Scientific and Technological Advice and the twenty-first Conference of the Parties (COP 21) in Paris, decision-making will be strongly focused on the national policy arenas that declared interest in implementing REDD+, for example in the context of their Intended Nationally Determined Contributions (INDCs). More evidence is needed to understand what hinders or enables successful contributions and efforts to reduce emissions through avoided deforestation and forest degradation.

This article will examine the national political context in a number of REDD+ countries to answer the following questions: (1) which factors affect the direction of REDD+ policies; (2) which combinations of these factors enable actual policy progress; (3) how do these enabling conditions feature in specific country contexts; and (4) how has the promise of performance-based funds affected the establishment of REDD+? The analysis here builds on a previous qualitative comparative analysis (QCA) of 12 countries' progress with REDD+ (Brockhaus et al., 2015; Korhonen-Kurki, Sehring, Brockhaus, & Di Gregorio, 2014; Sehring, Korhonen-Kurki, & Brockhaus, 2013). This follow-up study is timely because the REDD+ policy arena, at both the international and country levels, is dynamically evolving (Angelsen & McNeill, 2012). In this analysis we consider the role of a new factor: the promise of, and the commitment to, performance-based funding as part of the possible enabling conditions for REDD+. Results-based finance remains a central debate, in particular with regard to financial uncertainty and the emphasis given to the performance element in REDD+.

The article first briefly introduces the concept of transformational change and how it applies to the REDD+ policy arena, and then explains how we applied the two-step QCA method to collect and analyse country-level data on remote and proximate enabling conditions for REDD+ policy progress. The results section presents the different pathways that countries displayed, and discusses the differences in the results between the 2012 analysis and the current study. The article then discusses the results within the countries' policy contexts. The conclusion comments on the need to recognize the dynamic features of enabling conditions as a policy domain evolves.

2. Brief theoretical background: REDD+ and transformational change

In recent years a vast body of literature on REDD+ has emerged, discussing the risks and opportunities, institutional design and the political, economic and equity implications of REDD+ (Angelsen, Brockhaus, Sunderlin, & Verchot, 2012; Brockhaus, Di Gregorio, & Mardiah, 2014; Corbera & Schroeder, 2011; Herold & Skutsch, 2011; Kanninen et al., 2007; Minang & Van Noordwijk, 2014; Phelps, Guerrero, Dalabajan, Young, & Webb, 2010). Numerous bi- and multilateral agreements and support programs have emerged as well. Early on, key terms in the REDD+ terminology were related to the concept of 'payments for performance', a concept derived from the world of development aid and often referred to as 'output-based aid' and 'result-based aid' (Angelsen, 2013). A central concept of payments for performance relies on 'a contract between both partners that define incentives to produce measureable results' (Klingebiel, 2012, p. 3).

Overall, the REDD+ mechanism has not progressed toward implementation as quickly as anticipated. Nevertheless, several countries have established comprehensive REDD+ policies. However, carbon-effective, cost-efficient and equitable implementation of REDD+ requires aiming at and subsequently achieving, transformational change (Angelsen et al., 2009). We define transformational change 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).

This study explores the different pathways followed by single countries towards transformational change in the REDD+ arena, thereby explicitly focusing on an understanding of how and which domestic conditions enable this transformational change (Winkler & Dubash, 2015). It relies on theoretical considerations of the enabling conditions defined for the first study (Korhonen-Kurki et al., 2014, p. 169–170): possible enabling factors related to the institutional setting as well as actor-related processes in the REDD+ policy arena are defined as the 'institutional setting' and refer to the 'the formal and informal regulations, rules and norms that are established over time and that are not easily changed or transformed' (see also Baumgartner, Jones, & Wilkerson, 2011; North, 1990; Ostrom, 1990; Scharpf, 2000).

Finally, we understand the REDD+ policy arena as being shaped by the institutions, ideas and actions of a variety of actors – whether individuals, communities, organizations or networks – characterized by more or less hierarchical or inclusive policy processes, and involving a range of powerful actors that can facilitate or prevent specific policy formulation and implementation (Arts, 2012; Corbera & Schroeder, 2011; Scharpf, 1997).

3. Method and country selection

3.1. A brief introduction to a two-step QCA

This study is part of a longitudinal study (Korhonen-Kurki et al., 2014) that applies QCA to analyse the progress of REDD+ in 13 countries. QCA is a method that enables a systematic comparison of an intermediate number of case studies (Sehring et al., 2013). In QCA, each case is understood as a specific combination (called a configuration) of factors, known as 'conditions'. QCA is based on the concept of multiple conjunctural causation, meaning that: (1) most often not one condition alone but a combination of conditions will lead to the defined 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). The values of the causal conditions and outcomes are summarized in a data matrix, called a truth table. In crisp-set QCA (csQCA), used here, the conditions are binary, being assessed as either absent (0) or present (1) for the specific case. The current analysis builds on the two-step fuzzy-set QCA (fsQCA) developed by Schneider and Wagemann (2006), but applies it as csQCA, that is, with binary coding (0 = absence, 1 = presence). In the truth tables and the results below, we use QCA formulas of Boolean algebra (where + means or and * means and) and capital letters are used to denote the presence of a condition, whereas lower-case letters indicate its absence. Schneider and Wagemann (2006) differentiate between remote and proximate conditions, which are analysed in two separate steps. The outcome variable, REDD+ progress, refers to the establishment of comprehensive policies targeting transformational change in the REDD+ policy domain. The remote conditions refer to the institutional setting and the proximate conditions refer to conditions of the REDD+ policy arena that are determined by actors' agency. In the first step of the QCA, only the remote conditions are analysed in order to identify 'outcome-enabling conditions'. In the second step, each of the configurations that displays such outcome-enabling contexts is analysed in conjunction with the proximate factors.

3.2. Identification of conditions and country selection

Following Korhonen-Kurki et al. (2014), we defined six conditions for the two-step QCA, three for the institutional setting (remote conditions) and three for the policy arena (proximate conditions). The process of identifying and defining the relevant conditions for the analysis builds on work carried out by more than 60 country experts since 2010 (for the details on the process of identification of the conditions and indicators see Appendix 1 and Korhonen-Kurki et al., 2014). The first round of results, as well as a very detailed methodological background paper, were published in 2014 and 2013 respectively, based on the 2012 data (Korhonen-Kurki et al., 2014; Sehring et al., 2013). In 2014, the conditions were revised, a new condition was added and the same group of country experts reassessed each condition. All of the evaluations were gathered initially in March 2014, were cross-checked by the country experts in a joint workshop in April 2014 and then further revised (Brockhaus et al., 2015). The QCA was conducted using the software Tosmana (Cronqvist, 2011).

Country selection was coordinated with other project components as part of the Global Comparative Study on REDD+ (GCS-REDD), led by the Centre for International Forestry Research (CIFOR). The specific selection criteria for the countries were: engagement with REDD+ and specifically engagement with different multilateral programs such as FCPF and FIP and large bilateral REDD+ programs

Table 1. Countries in the qualitative comparative analysis, 2014.

Africa	South America	Asia–Pacific
Burkina Faso	Brazil	Indonesia
Cameroon	Guyana	Nepal
Democratic Republic of the Congo (DRC)	Peru	Papua New Guinea (PNG)
Ethiopia		Vietnam
Mozambique		
Tanzania		

(Table 1). While Bolivia was dropped in the 2014 analysis, two new countries were added: Guyana and Ethiopia. Guyana is not one of CIFOR’s core countries in the REDD+ study, but provides an interesting case, as it is among the countries receiving performance-based funding for REDD+. Ethiopia became part of the GCS REDD+ in 2013 and strengthens the evidence on the experience of REDD+ from the African continent.

4. Conditions for establishing REDD+: changes in the QCA design between 2012 and 2014

In order to scrutinize the different pathways followed by single countries towards transformational change in the REDD+ arena, we defined six conditions (factors) to be included in the QCA in each country. For the assessment of the presence or absence of each condition as well as of the outcome (REDD+), several indicators were selected and thresholds defined. The operationalization of these variables is listed in detail in Appendix 1, Table A1–A3. The next sub-section describes the outcome variables, which is followed by the description of each of the six conditions.

4.1. Outcome: establishment of comprehensive policies targeting transformational change in the REDD+ policy domain

As in the first study, but now with longitudinal data, we aim to explain which factors contribute to the outcome variable defined as: the establishment of comprehensive policies targeting transformational change in the REDD+ policy domain (denoted hereafter by the abbreviation REDD). As indicators for the presence of this outcome, country teams assessed the state of the measurement, reporting and verification (MRV) system, the availability of REDD+ financing, coordination mechanisms, grievance procedures to safeguard the implementation of REDD+ and the overall presence of a national strategy (see Appendix 1, Table A1). We determined that at least two indicators must be present in order to qualify for a positive outcome.

4.2. Joint context

The 13 countries analysed here differ in many respects, but they do have in common several factors that are important for the success or failure of REDD+. These factors were evaluated during the first round of

analysis and they showed the same values in most of the countries, so that we defined them as their relevant joint context (see the joint context in Korhonen-Kurki et al., 2014). Overall, the countries taking part in this study are tropical developing or emerging economy countries with a clear political commitment to REDD+, but with typically powerful drivers of deforestation, weak multilevel governance, low cross-sectoral horizontal coordination and inadequate capacity – all characteristics that hinder the quick implementation of an effective, efficient and equitable REDD+ mechanism (Korhonen-Kurki et al., 2014). In contrast to the 2012 evaluation, multi-actor coalitions calling for policy change away from forestry exploitation and business-as-usual practices (COAL) have emerged in all countries and are therefore now also a common feature of the joint context. This joint context presents a *ceteris paribus* condition for our analysis and allows inferences for countries with a similar context to be made.

4.3. Institutional setting (remote conditions)

REDD+ policy processes take place in an environment that is conditioned by pre-existing institutions. To explore the institutional settings of the REDD+ policy arena, we defined three remote conditions for REDD+ and related hypotheses, similar to those identified in the first study (see Appendix 1, Table A2). They are the:

- Pressure from the shortage of forest resources (PRES): The forest is under high pressure from deforestation due to economic activities linked to the institutionalized patterns of forest use and might soon become unable to meet needs or fulfil users' interests. We expect that if a country belongs to the group of countries in which forests are under high levels of deforestation 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): Key features comprise the existence of a legal framework that defines the tenure, use and management rights and include both formal and customary regulations, the enforcement of laws and policies related to sustainable forest management, participation by national and local authorities and a certain degree of compliance by forest users. We expect that achieving REDD+ outcomes will require 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 is already underway, addressing forests and climate change and aimed at departing from business-as-usual practices that are broader than and/or developed before the UNFCCC REDD+ policy process, e.g. nationally appropriate mitigation actions (NAMAs), anti-deforestation programs, low-carbon development strategies, forest-based adaptation and mitigation efforts and forest-based payment for environmental services (PES) schemes. We expect that effective REDD+ strategies will 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.

4.4. Policy arena (proximate conditions)

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. We identified three proximate conditions and related hypotheses on their impact on the policy arena (see Appendix 1,

Table A3), and investigated which conditions are necessary to accomplish outcome-enabling configurations and which combinations provide for a sufficient configuration:

- 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.
- Inclusiveness of the policy process (INCL): There is a high degree of participation and consultation of key stakeholders (including those from the private sector), civil society and indigenous peoples. Legal provisions supporting the right of indigenous peoples 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 the resistance to the implementation of REDD+. The inclusion of stakeholders in the policy process is therefore crucial for legitimacy and sustainability.

All the above five conditions were included in the analysis done in 2012, as well as a sixth condition (COAL), now moved to the joined context as noted above (Korhonen-Kurki et al., 2014). However, in the current analysis we aim to scrutinize whether the availability of performance-based funding is playing a role in the establishment of REDD+. Therefore a new factor was included:

- Availability of payment-for-performance funds for REDD+ (PERFO): REDD+ funding on a payment-for-performance basis is available through a transfer of funds from an international donor. In a formal agreement, such as a Letter of Intent, the donor has committed to provide the funds, and the prospective recipient government has expressed interest in achieving eligibility to access those funds. We expect that those countries where payment-for-performance funds are available and the agreement has been signed to confirm the commitment of both parties to performance-based payment, will have established REDD+ policies and achieved REDD+ outcomes faster than those countries where such performance-based funds are not available.

5. Results of the analysis and comparison with the first study

5.1. Assessments of conditions in 2012 and 2014

The new evaluation by country experts was done using indicators developed for each factor (see Appendix 1). As Table 2 shows, only a few changes in the overall value of the conditions can be observed and it seems that REDD+ at the national level is progressing slowly. While much is happening in the policy arena and changes are emerging at the indicator level, they have not substantially altered the overall factor values.

It is important to note that in the first round of our analysis in 2012, only Brazil, Indonesia and Vietnam had at least two of the five indicators present to qualify for an outcome of 1. In the second round, Tanzania and the Democratic Republic of the Congo (DRC) joined this group mainly due to their progress with national REDD+ strategies, as did Guyana. While in all these countries experts also noted challenges and backlashes to the REDD+ policy design, these six countries fulfilled sufficient criteria for the presence of the above defined outcome “*Establishment of comprehensive policies*

Table 2. Truth table for all the factors for 2012 and 2014.

Country	PRES		EFF		CHA		OWN		INCL		COAL		PERFO		REDD	
	2012	2014	2012	2014	2012	2014	2012	2014	2012	2014	2012	2014	2012	2014	2012	2014
Brazil	1	1	1	1	1	1	1	1	1	1	1	1	–	1	<u>1</u>	<u>1</u>
Burkina Faso	1	1	0	0	<u>0</u>	<u>1</u>	0	0	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>	–	0	<u>0</u>	<u>0</u>
Cameroon	1	1	1	1	0	0	0	0	<u>0</u>	<u>1</u>	0	0	–	0	<u>0</u>	<u>0</u>
DRC	0	0	0	0	1	1	0	0	1	1	1	1	–	0	<u>0</u>	<u>1</u>
Ethiopia	–	1	–	0	–	1	–	0	–	1	–	1	–	0	–	<u>0</u>
Guyana	–	0	–	1	–	1	–	1	–	1	–	1	–	1	–	<u>1</u>
Indonesia	1	1	0	0	1	1	1	1	0	0	1	1	–	1	<u>1</u>	<u>1</u>
Mozambique	1	1	0	0	<u>0</u>	<u>1</u>	1	1	1	1	1	1	–	0	<u>0</u>	<u>0</u>
Nepal	0	0	1	1	0	0	0	0	1	1	1	1	–	0	<u>0</u>	<u>0</u>
Peru	0	0	0	0	1	1	1	1	1	1	1	1	–	0	<u>0</u>	<u>0</u>
PNG	0	0	0	0	0	0	0	0	0	0	1	1	–	0	<u>0</u>	<u>0</u>
Tanzania	1	1	0	0	0	0	0	0	1	1	1	1	–	0	<u>0</u>	<u>1</u>
Vietnam	0	0	<u>1</u>	<u>0</u>	1	1	<u>1</u>	<u>0</u>	0	0	1	1	–	0	<u>1</u>	<u>1</u>

Notes: The final column is the outcome variable 'REDD'. Changed values in the assessments between 2012 and 2014 are shown in bold, italic and as underlined. CHA = already initiated policy change; COAL = existence of transformational coalitions; DRC = Democratic Republic of the Congo; EFF = key features of effective forest legislation, policy and governance; INCL = inclusiveness of the policy process; OWN = national ownership; PERFO = availability of payment-for-performance funds for REDD+ (PERFO); PNG = Papua New Guinea; PRES = pressure from shortage of forest resources; REDD = establishment of comprehensive policies targeting transformational change in the REDD+ policy domain.

targeting transformational change in the REDD+ policy domain". Based on the 2014 assessments, the QCA results presented here aim to identify which conditions enabled the observed progress.

5.2. QCA results based on the 2014 assessment

5.2.1. Analysis of the institutional context

In a first step, we analysed the institutional context (PRES, EFF and CHA) of the 13 countries. Compared with the 2012 analysis a much more complex picture emerges. While ideally only those countries that share the same configuration would have the same outcome in common, we now observe two contradictory results, where countries that share the same combination of conditions have different assessments of the outcome. This is the case for the combination of the presence of the conditions pressure from shortage of forest resources (PRES) and already initiated policy change (CHA) combined with the absence of key features of effective forest legislation, policy and governance (eff). Here, we find Burkina Faso, Ethiopia and Mozambique without the outcome REDD, while Indonesia was among those where the outcome was assessed as present (see Table 2). The combination of the absence of both pressure from shortage of forest resources (pres) and key features of effective forest legislation, policy and governance (eff) and the presence of already initiated policy change (CHA) also shows a similarly contradictory result, whereby DRC and Vietnam have the outcome REDD present, while Peru has not achieved this outcome. In 2012, only one contradictory case emerged, namely Bolivia, which – having abandoned its REDD+ agenda – is no longer part of the analysis. These findings are summarized in Figure 1 and the truth table (Table A4) can be found in Appendix 1.

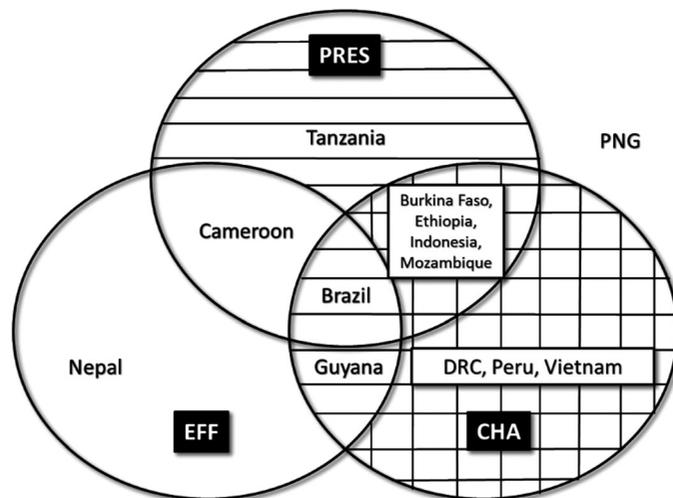


Figure 1. Observed configuration of the three remote conditions. CHA = already initiated policy change; DRC = Democratic Republic of the Congo; EFF = key features of effective forest legislation, policy and governance; PNG = Papua New Guinea; PRES = pressure from shortage of forest resources. Note: The lined parts show the configurations with outcome 1, and the grid areas those that demonstrate contradictory results (outcome 0 and 1).

In 2012, already initiated policy change was a necessary condition, yet not sufficient on its own. The 2014 analysis shows that CHA is gaining in importance, as the presence of this condition is observed as a stand-alone enabling condition in DRC and Vietnam – and in Brazil, Guyana and Indonesia in combination with other factors – that is, it occurs in all countries with a positive outcome apart from Tanzania.

In the next step, we analyse the policy arena of those 10 countries that show the two outcome-enabling remote configurations. Hence, Papua New Guinea, Nepal and Cameroon are not part of this step of the analysis.

5.2.2. Analysis of the policy arena (proximate conditions)

In the 2012 analysis, adding the three identified policy arena (proximate) conditions (OWN, INCL and PERFO) was a successful strategy to resolve the one observed contradictory case of Bolivia (Schneider & Wagemann, 2012, p. 120). In 2014 we observed 4 contradictory cases, within both enabling configurations for the institutional setting. Hence, in the 2014 analysis it is even more obvious that the three institutional conditions alone cannot explain the REDD outcome. However, when analysing the two enabling institutional configurations in combination with the conditions for the policy arena, contradictory cases remained, as the following sections will show.

5.2.2.1. PROXIMATE CONDITIONS AND ALREADY INITIATED POLICY CHANGE

The analysis of the three identified policy arena (proximate) conditions (OWN, INCL and PERFO) and the remote condition of already initiated policy change (Figure 2; see also Table A5 in

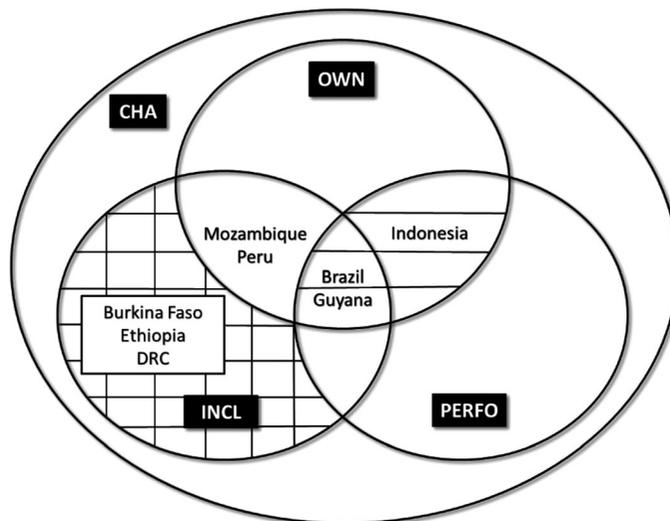


Figure 2. Observed configuration for already initiated policy change and the three proximate conditions. CHA = already initiated policy change; DRC = Democratic Republic of the Congo; INCL = inclusiveness of the policy process; OWN = national ownership; PERFO = availability of payment-for-performance funds for REDD+. Note: The lined parts show the configurations with outcome 1, and the grid areas are those that demonstrate contradictory results (outcome 0 and 1).

Appendix 1) shows five observed cases for the remaining nine countries where already initiated policy change (CHA) is present. One configuration, where national ownership (own) as well as *availability of payment-for-performance funds for REDD+ (perfo)* are absent but where inclusiveness of the policy process (INCL) is present (CHA*own*INCL*perfo), shows a contradictory result: DRC was assessed as being successful in the outcome REDD+, while Burkina Faso and Ethiopia were not.

If we take the configurations that lead to a positive outcome (REDD) among the observed cases, we see that in Brazil, Guyana and Indonesia, already initiated policy change is complemented by a strong ownership of the REDD+ process and the availability of performance-based funding. This combination of conditions has led to the REDD+ process being moved forward, irrespective of whether the process is inclusive or not. However, as noted also for the earlier analysis, inclusiveness may be crucial for the sustainability of REDD+ and for effective implementation (Korhonen-Kurki et al., 2014). Inclusiveness was the factor present in the second enabling, yet contradictory, configuration with already initiated policy change remaining present, whereas performance base funding and ownership were both absent. This was observed for DRC and Vietnam with positive outcomes and for Burkina Faso and Ethiopia with negative outcomes. This finding requires further investigation, as DRC and Vietnam both lack national ownership (Vietnam was assessed as having stronger national ownership in the past), have no performance-based REDD+ finance instruments in place and still show positive REDD outcomes, irrespective of whether there are inclusive policy processes or not.

5.2.2.2. PROXIMATE CONDITIONS AND HIGH LEVELS OF PRESSURE ON FOREST RESOURCES, WITH NO KEY FEATURES OF EFFECTIVE FOREST LEGISLATION, POLICY AND GOVERNANCE IN PLACE

For those countries in which the enabling remote configuration PRES*eff (high levels of pressure on forest resources, with no key features of effective forest legislation, policy and governance in place) was observed, combining these with the proximate policy arena once again shows some contradictory results. Table A6 (in Appendix 1) and Figure 3 show that for the policy arena in connection with pressure on forests together with the lack of effective forest governance, the results are less clear than for the combination with already initiated policy change discussed above. First, from the eight possible configurations, only three are observed. One of them leads to a contradictory result (Tanzania with outcome 1, Ethiopia and Burkina Faso with 0).

In Indonesia, the institutional context configuration of having high levels of pressure on forests even without having effective forest legislation in place is combined with two policy-arena-specific conditions being present: high national ownership of the REDD+ policy process (OWN) and availability of performance-based funding (PERFO), even without an explicitly inclusive process (incl). This result is similar to the earlier finding, where already initiated policy change together with presence of ownership and performance-based funding was found to be an outcome-enabling factor configuration.

The configuration of having high levels of pressure on forests even without having effective forest legislation in place combined with an inclusive process was observed for Tanzania, Burkina Faso and Ethiopia. The configuration is contradictory, as it led to a positive outcome in Tanzania, but not in Burkina Faso and Ethiopia. In all three countries, while donors dominate the REDD+ process, it is designed to be an inclusive participatory process (INCL). None of them had any performance-based funding.

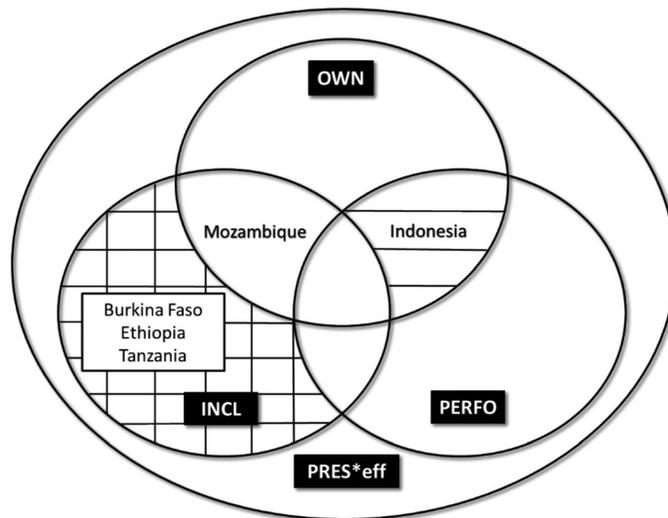


Figure 3. Observed configuration for high levels of pressure on forest resources with no key features of effective forest legislation, policy and governance in place and the three proximate conditions. INCL = inclusiveness of the policy process; OWN = national ownership; PERFO = availability of payment-for-performance funds for REDD+; PRES*eff = high levels of pressure on forest resources with no key features of effective forest legislation, policy and governance in place. Note: The lined parts show the configurations with outcome 1, and the grid areas are those that demonstrate contradictory results (outcome 0 and 1).

6. Towards transformational change in national REDD+ policy domains?

The QCA analysis showed the relevance of multiple factor combinations stemming from a wide range of economic, social and political conditions when trying to understand what enables larger transformational change. One key finding of our analysis and the comparison between 2012 and 2014 is that progress with REDD+ – even in first-generation REDD+ countries – is still limited, despite the fact that in our analysis six out of 13 countries have now achieved the REDD outcome: Indonesia, Brazil, Vietnam, Tanzania, DRC and Guyana.

We identified four different factor combinations that led to a positive outcome and factors such as the already initiated policy reforms and national ownership play an important role in some of these observed cases, as the 2012 analysis already indicated. However, unlike our analysis of 2012, a number of contradictory cases remained even after adding policy arena-specific factors in the analysis. This suggests that as the REDD+ policy domain evolves over time, explaining the progress becomes more complex. Hence, the findings above need to be discussed in the context of the wider dynamics in countries' REDD+ policy arenas.

6.1. Putting the findings into context: exploring contradictory cases within countries' emerging REDD+ policy arenas

6.1.1. Progress, but incomplete: first-generation REDD+ countries

Brazil was assessed as successful in progress with REDD+ and shares many conditions with Guyana, except for PRES. Brazil has still not completely overcome path dependencies in deforestation and forest degradation (May, Millikan, & Gebara, 2011), despite the country's investments in command and control measures (Assunção, Gandour, & Rocha, 2012; Maia, Hargrave, Gómez, & Röper, 2011). Guyana, with much less pressure on forest resources seems to strengthen its REDD+ path with improved institutions of forest governance and considerable progress in developing an MRV system (Birdsall & Busch, 2014), although this remains debated (Henders & Ostwald, 2013). Both countries display the successful factor combination of their commitment to results-based finance together with strong national ownership.

Another country showing this combination is Indonesia, confirming the importance of ownership over the REDD+ process if performance-based payments are supposed to make a difference. REDD+ in Indonesia has been from its beginnings a highly contested and dynamic policy arena (Indrarto et al., 2012). While the outcome in 2014 was assessed 1, recent changes in the legal context in Indonesia might significantly affect how REDD+ will be shaped in the future. In particular the integration of the former, separate ministerial-level REDD+ Agency within this new Ministry of Environment and Forestry has created some uncertainty about the commitment to and the effective implementation of the REDD+ agenda, but might trigger in the long term stronger ownership over the process.

6.1.2. Contradictions and questions: REDD+ countries moving back and forth

Tanzania was also assessed as having achieved a successful outcome, due to the release of its national REDD+ strategy in 2013–2014. However, the document was considered very weak (Kweka et al., 2015). Although Tanzania has not yet formulated NAMAs or similar climate policy strategies, it has long implemented participatory forest management programs. This could be interpreted as a path change in forest policy and might have created an enabling context for REDD+ policy formulation. However, other developments in Tanzania would give reason for strong doubts about any actual progress with REDD+: the ending of Tanzania's engagement in bilateral agreements with Norway and Finland, which provided most of its financial backing and technical assistance; the lack of procedural clarity for REDD+ piloting activities, which are mostly directly donor funded and implemented by civil societies. All of this indicates that the outcome achievement in 2014 seems to lack stability, which would also explain why Tanzania features among the contradictory cases in our analysis.

DRC and Vietnam, the two other countries with a positive outcome irrespective of whether there are inclusive policy processes or not, both also lack national ownership and have no performance-based funding instruments in place. If we look at the current context of REDD+ in Vietnam, it is important to note that ownership of the REDD+ process has reduced only recently (and seems to be regained with developments in the institutional set-up in 2015). Hence, the REDD+ progress we see might still be an effect of strong national ownership in the past (Korhonen-Kurki et al., 2014; Pham, Moeliono, Nguyen, Nguyen, & Vu, 2012). On the other hand, the finding could indicate that progress is possible when donors politically and financially dominate the REDD+ process while there is political commitment to REDD+ by the government as well as by coalitions of drivers of change.

In DRC, progress has been made over the past years (Mpoyi, Nyamwoga, Kabamba, & Assembe-Mvondo, 2013), and since 2014 a REDD+ strategy is in place. This, together with the presence of a REDD+ coordination body, means that our defined outcome on progress with REDD+ is assessed as being present. However, although the strategy has been approved by the government, several stakeholders have cautioned that an effective implementation may not be achieved due to uncertain funding and persistent governance problems, such as corruption (Assembe-Mvondo, 2015). These issues could serve as an explanation for why DRC is also found often among the contradictory cases, as was the case for Tanzania (a contradictory case means we have similar factor combinations leading to different outcomes). For example, DRC with positive outcome contradicts with Peru with negative outcome when previous policy change is present (see Figure 1).

6.1.3. REDD+ countries on a rocky road

The case of DRC also contradicts with Ethiopia and Burkina Faso for the case of lack of ownership and performance-based funding commitment, while having a more inclusive process (see Figure 2). Different from DRC, the outcome (REDD) is negative for Burkina Faso and Ethiopia. Both countries have had previous policy change (CHA) but no ownership and no performance-based instruments are present. This is probably explained by the fact that both countries started their REDD+ process rather recently (Bekele et al., 2015; Kambire et al., 2015).

In Mozambique, although the REDD+ process started early, and is considered inclusive and led by national institutions since 2009, it is still in early stages of development. Despite possibilities for performance-based funding, that factor is still absent as Mozambique seems to approach REDD+ very cautiously, perhaps due to what was perceived as a threat from REDD+-related land grabs due to a very high level of pressure from international investors to acquire land for REDD+ projects (Nhantumbo, 2011; Siteo, Salomão, & Wertz-Kanounnikoff, 2012). Peru continues to advance, albeit slowly, toward the consolidation of national strategies and laws regarding REDD+ and forests more broadly (Piu & Menton, 2014). The New Forestry Law was passed in 2011, but was not enforced as of August 2015 due to delays in consultations and approval of its regulations. The government has also recently presented a draft of its National Strategy for Forests and Climate Change and opened it up for public comment. At COP 20, Peru signed an agreement with Norway and Germany who committed US\$300 million towards results-based payments for REDD+. However, it has to be noted that our research was conducted before these developments in 2014, hence the country did not feature among the six successful cases.

Cameroon, Nepal and Papua New Guinea (PNG) were all excluded from the analysis after the first step, as none of these countries were part of any successful or contradictory factor combination. Nepal and Cameroon both seem to have made some progress in policy development recently, PNG to an much lesser extent (Babon & Gowae, 2013; Dkamela, 2011; Paudel, Khatri, Khanal, & Karki, 2013), but these advances do not combine yet into enabling institutional conditions.

6.2. Moving from 2012 to 2014: already initiated policy change as an all-time catalyst, and the promise of performance-based finance together with the importance of national ownership

When analysing the institutional context and configurations of conditions that could have enabled such a positive outcome for the six countries, path changes already initiated through earlier policy

reforms stood out as a key condition. Already initiated policy change, even on its own, is sufficient as an enabling condition in the institutional setting. This is so even without certain other conditions being in place, such as the presence of high levels of pressure on forest resources or the need for having effective forest legislation, policy and governance. We observed only one successful case without the presence of already initiated policy change – Tanzania. However, Tanzania can be considered as a deviant case and the results of the analysis can be explained only when taking into account larger policy change and reform processes beyond what is considered directly related to the climate change policy domain. Hence it can be questioned whether the policies mentioned above initiated a similar path change and thus eased REDD+ policy formulation, or showed just a short-term effect on REDD+ policy formulation that might not be sustained over time.

One of the objectives of this analysis was to assess the importance of performance-based funding for REDD+. Of the six successful cases out of 13, three have access to performance-based finance for REDD+ (Brazil, Guyana and Indonesia) while the other three have not (Tanzania, Vietnam and DRC). Our analysis shows that the availability of performance-based funds has a positive impact when it is combined with strong national ownership of the REDD+ process. In those cases where national ownership is low, meaning that donors or other external agencies dominate the REDD+ policy processes, countries were also able to achieve the outcome without the explicit availability of performance-based funding, as was the case for Tanzania, DRC and Vietnam. This would indicate that in cases where REDD+ commitment is externally driven, non-performance-based funding has an effect equal to that of performance-based funding.

This suggests that the role of donors in establishing REDD+ is important in influencing outcomes: in the cases of DRC and Vietnam, for example, the REDD+ process is assessed as being donor-led and the countries have received considerable finance other than performance-based REDD+ funding. This combination has also enabled the desired path change. Further analysis is needed to assess how crucial performance-based funding is over time, and how sustainable other types of funding are if national ownership of the REDD+ process is lacking, in the pursuit of achieving long-term progress with REDD+.

With REDD+ moving more and more from the international agenda into national implementation arenas, it will be interesting to continue building on longitudinal studies such as this in order to gain deeper insights into which enabling factor configurations have the greatest effect on actual REDD+ policy outcomes. Once more countries have reached the third phase of REDD+ and can deliver measured carbon and non-carbon benefits, it is also important to revise the set of initial conditions and indicators, as well as what defines a successful outcome as national REDD+ policy arenas evolve and change over time. The comparison between 2012 and 2014 indicates a clear increase in the complexity of pathways to REDD+ progress.

7. Conclusions

Moving from a readiness phase through policy design and implementation toward result-based payments for carbon and non-carbon benefits is challenging for most REDD+ countries, as numerous political-economic factors hinder such progress. Understanding which conditions and configurations enable REDD+ policy progress is therefore crucial, and can help countries to learn from more

successful examples and identify key areas for improvement. The analysis presented here aims to contribute to this understanding and provides insights in complex policy processes through the establishment of a longitudinal study, mapping the trajectories of REDD+ policy progress at two points in time, 2012 and 2014. The analyses at both time points highlighted the importance of already initiated broader policy change, and in the 2014 analysis the availability of performance-based funding in combination with strong national ownership of the REDD+ policy process featured prominently as enabling conditions to formulate REDD+ policies that are likely to deliver efficient, effective and equitable outcomes.

One key lesson from this comparison relates the design of longitudinal QCA research. Given the highly dynamic nature of policy arenas such as REDD+, the variables and criteria for assessment will necessarily change over time as well. For example, while one factor featured prominently in outcome-enabling configurations in 2012 as a decisive factor, namely the presence of coalitions calling for change in and beyond the forestry sector, it is now a factor that is part of a joint context. The growing number of contradictory cases indicates that eventually more factors and further revisions to the indicators are required to define more precisely what configuration of factors enables REDD+ progress, and what configurations do not.

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Appendix. Definitions of all the factors and truth tables

Table A1. Operationalization of the outcome.

Presence	Absence	Indicators of presence	Evaluation
Establishment of comprehensive policies targeting transformational change in the REDD+ policy domain (REDD)			
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	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	established	

Table A2. Operationalization of conditions for the institutional setting.

Presence	Absence	Indicators	Evaluation
Pressure from shortage of forest resources (PRES)			
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)			
A sound and clear legal framework with clearly assigned rights and management regulations is in place 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	Tenure and rights are in many respects unclear and contested 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	Sound and consistent legal forestry framework and policies 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	Two or more indicators present = 1 Zero or one indicator present = 0
Already initiated policy change (CHA)			
The government has already formulated and is implementing policy strategies addressing forests and climate change and aimed at departing from business-as-usual practices that are broader than and/or developed prior to the UNFCC REDD+ policy process (e.g. NAMA); or low-carbon development strategies and/or PES schemes have already been established independently of REDD+ policies	The government has not yet formulated advanced policy strategies on climate change (e.g. NAMA) and deforestation or a low-carbon development strategy; or existing policies are highly insufficient or have not been 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

Notes: NAMA = nationally appropriate mitigation actions.

^a The 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 and (5) low forest cover, negative deforestation rate (Angelsen, 2009).

Table A3. Operationalization of conditions for the policy arena.

Presence	Absence	Indicators of presence	Evaluation
National ownership (OWN)			
Pro-REDD + media statements by government (national and subnational)	Anti-REDD + media statements by national state actors and/or pro-REDD + statements by international actors dominate policy discourse	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 the 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 the process	No budget allocation to REDD +		
Budget allocation to REDD +			
Inclusiveness of the policy process (INCL)			
Key stakeholders, including civil society, the 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 applied	Key stakeholders (civil society, the private sector and indigenous people) participate or are at least consulted during the REDD + process	Two or more indicators are 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 A3. Continued

Presence	Absence	Indicators of presence	Evaluation
Transformational coalitions (COAL)			
Existence of coalitions of drivers of change with room to maneuver in the political structures and impact on the discourse	No observable coalitions of drivers of change, or any that are 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 Zero or one indicator present or first indicator absent = 0
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 a pro-REDD + direction) both inside and outside government institutions Policy actor coalitions calling for substantial political change in forest policies are more prominent in the media than are 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)	
Availability of payment-for-performance funds for REDD + (PERFO)			
REDD + funding on a payment-for-performance basis is available through a transfer of funds by an international donor; a Letter of Intent with a respective donor confirms the commitment of the government to receiving payment for performance and the channeling of these payments to the REDD + budget system	There is no government commitment to use payment-for-performance funds for REDD + and/or such funds are not available	Foreign REDD + funding on a payment-for-performance basis is available A Letter of Intent (or equivalent) confirms the commitment of both parties to a payment-for-performance process for REDD +	Both indicators present = 1 Fewer than two indicators present = 0

Note: NGO = nongovernmental organization.

Table A4. Truth table for the institutional context in 2014 (remote conditions).

PRES	EFF	CHA	REDD	Cases
1	1	1	1	Brazil
1	0	1	C	Burkina Faso, Ethiopia, Indonesia, Mozambique
1	1	0	0	Cameroon
0	0	1	C	DRC, Peru, Vietnam
0	1	1	1	Guyana
0	1	0	0	Nepal
0	0	0	0	PNG
1	0	0	1	Tanzania

0 = absent; 1 = present; C = contradictory result.

Table A5. Truth table for already initiated policy change and the proximate conditions.

CHA	OWN	INCL	PERFO	REDD	Cases
1	1	1	1	1	Brazil, Guyana
1	0	1	0	C	Burkina Faso, DRC, Ethiopia
1	1	0	1	1	Indonesia
1	1	1	0	0	Mozambique, Peru
1	0	0	0	1	Vietnam
1	0	1	1		Not observed
1	0	0	1		Not observed
1	1	0	0		Not observed

0 = absent, 1 = present, C = contradictory result.

Table A6. Truth table for high levels of pressure on forest resources with no key features of effective forest legislation, policy and governance in place, and proximate conditions.

PRES*EFF	OWN	INCL	PERFO	REDD	Cases
1	0	1	0	C	Burkina Faso, Ethiopia, Tanzania
1	1	0	1	1	Indonesia
1	1	1	0	0	Mozambique
1	1	1	1		Not observed
1	1	0	0		Not observed
1	0	0	0		Not observed
1	0	1	1		Not observed
1	0	0	1		Not observed

0 = absent, 1 = present, C = contradictory result.