**Supplementary material**

**APPENDIX**

**Definitions of all factors and operationalization of the outcomes**

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| **Definition of the outcome ‘REDD’:** REDD+ ‘policies and measures’ are both established and in operation |
| ***Presence*** | ***Absence*** | ***Indicators of presence*** | ***Evaluation*** |
| New institutions, procedure, policies and measures are established and operationalized by committed actors.These institutions support concrete policy formulation and outputs, and are, at least partly, driven by performance-based payments. | New institutions and procedures are not established, or are met with resistance, thus undermining their capacity to function.REDD+ policy formulation remains fragmented, or is undertaken mainly by external actors.There are no policies and measures operationalized.  | \* MRV system developed.\* National strategy/ policy document in place.\* REDD+ demonstration sites/pilots/projects are applying monetary payment.\* SIS (Safeguard and Information System) already developed. \* Performance-based payments being accessed. | Three indicators present = 1Less than three indicators present = 0 |

**Operationalization of conditions for the institutional setting**

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| **Pressure from shortage of forest resources (‘PRES’)** |
| ***Presence*** | ***Absence*** | ***Indicators***  | ***Evaluation*** |
| Forests are under pressure from high deforestation rates. | 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 = 1Forest transition stage 1, 4 or 5 and deforestation rate below 0.5% annually = 0 |
| **Sound and consistent legal forestry framework and policies, with some evidence of implementation efforts (‘EFF’)** |
| ***Presence*** | ***Absence*** | ***Indicators of presence*** | ***Evaluation*** |
| 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. | 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 in place.\* Enforcement mechanisms in place.\*Evidence of implementation efforts.\* Evidence of effective implementation.  | Three indicators present = 1Less than three indicators present = 0 |
| **Already-initiated policy change (‘CHA’)** |
| ***Presence*** | ***Absence*** | ***Indicators of presence*** | ***Evaluation*** |
| The government has already formulated and is implementing policy strategies addressing forest 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) and deforestation; 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 = 1Absent = 0 |

*Note:* a 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 (Arild Angelsen and Brockhaus, 2009).

**Operationalization of conditions for the policy arena**

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| **‘Powerful’ transformational coalitions (‘COAL’)** |
| ***Presence*** | ***Absence*** | ***Indicators of presence*** | ***Evaluation*** |
| Existence of coalitions of drivers of change with room to manoeuvre in the political structures and impact on the discourse.Policy actors and coalitions calling for transformational change are more prominent in the media than those supporting the status quo. These coalitions also include the powerful political actors. | 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+.Media and policy circles are dominated by coalitions supporting the status quo and business as usual. | \*Notions or existence of coalition building among actors supporting REDD+ policies (e.g. umbrella organization, regular meetings, joint statements, personal relations).\*There are drivers of change (policy actors that lead discourse in pro-REDD+ direction) both inside and outside government institutions.\*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).\*Pro-REDD+ policy coalitions include powerful policy actors. | Two or more indicators present, including the last indicator = 1Zero or one indicator present or last indicator absent =0 |
| **National ownership and political leadership (‘OWN’)** |
| ***Presence*** | ***Absence*** | ***Indicators of presence*** | ***Evaluation*** |
| Pro-REDD+ media statements by government (national and subnational). National research and NGO actors dominate policy discourse (media analysis).Engagement of national political institutions in REDD+ policy formulation. Donor agendas do not dominate the process. National political leaders highlight REDD+ as a priority. | Anti-REDD+ media statements by national state actors and/or pro-REDD+ statements by international actors dominate policy discourse. Policy formulation is mainly undertaken by foreign actors. Financial incentives from donors are the main reason for REDD+ implementation.REDD+ is not considered as a priority by the political leaders. | \*Regular pro-REDD+ statements by government appear in the media.\*REDD+ policy formulation is led by national political institutions.\*Foreign donors/actors have only a minor/advisory role and agenda in REDD+ policy formulation.\*REDD+ is highlighted as a priority by political leaders. | At least three indicators present = 1, less than three indicators present = 0 |

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| --- |
| **Availability of payment-for-performance funds for REDD+ (‘PERFO’)**  |
| ***Presence*** | ***Absence*** | ***Indicators of presence*** | ***Evaluation*** |
| 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 channelling 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.\*An LOI (or equivalent) confirms the commitment of both parties to a payment-for-performance process for REDD+.  | Both indicators present = 1Fewer than 2 indicators present = 0 |
|  |  |  |  |

***Institutional setting (remote conditions)***

REDD+ policy processes take place in an environment that is framed by a set of already-existing institutions. To explore the institutional settings in the REDD+ policy arena, three remote conditions are defined for REDD+ and related hypothetical assumptions.

* ***Pressure from scarcity of forest resources* (‘PRES’):**It is expected that if a country belongs to the group of countries in which forests are under high levels of pressure, it will face a stronger need to engage in active forest protection and overcome path dependency and resistance.
* ***Sound and consistent legal forestry framework and policies and some evidence of implementation efforts* (‘EFF’):** It is expected that achieving REDD+ outcomes requires that certain key elements of a sound legal forestry framework, as well as enforcement mechanisms and recorded evidence of implementation efforts.
* ***Already-initiated policy change* (‘CHA’):** It is expected 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.

 ***Policy arena (proximate conditions)***

Whereas the institutional setting provides key conditions for an enabling context, actions by political actors shape both the policy arena and the processes that lead to transformational change. Three proximate conditions were identified with hypothetical assumptions on their impact on the policy arena (for more details see Korhonen-Kurki et al., 2014 and Brockhaus et al 2016).

* ***National ownership* *and political leadership* (‘OWN’)**: It is expected that REDD+ policy documents are more likely to be translated into effective and sustainable activities if REDD+ policy processes are led by committed powerful national actors.
* ***‘Promise of reward’ based on availability of results-based funding for REDD+ (‘PERFO’):*** It is expected that those countries where payment-for-performance funds are available, and an LOI (or equivalent) has been signed to confirm the commitment of both parties, will see REDD+ policies and measures established and REDD+ outcomes achieved faster than those countries where performance-based funds are not available.
* ***‘Powerful’ transformational coalitions* (‘COAL’)**. It is assumed 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.

**ADDITIONAL INFORMATION ON THE ANALYSIS**

**Step 1: remote conditions**

Table 1: Full Truth table for remote conditions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  PRES’ | ‘EFF’ | ‘CHA’ | ‘REDD’ |  |
| 1 | 1 | 1 | C | Brazil (1), Burkina Faso (0), Mozambique (0),  |
| 0 | 1 | 1 | C | Guyana (1), Peru (1), Nepal (0) |
| 1 | 1 | 0 | 0 | Cameroon |
| 0 | 0 | 1 | C | DRC (1), Ethiopia (0), Vietnam (0) |
| 1 | 0 | 0 | 1 | Tanzania |
| 1 | 0 | 1 | 1 | Indonesia |
| 0 | 0 | 0 | 0 | PNG |
| 0 | 1 | 0 | ? | *Not observed* |

**Analysis of sufficient conditions/configurations**

Sufficient remote conditions based on the analysis of this study (run with TOSMANA):
CHA + PRES\*eff.

**Analysis of necessary conditions**

None

**Coverage and consistency:**

As can be seen in table 1, there are three rows with contradictory results. However, since this is a two-step QCA, there is no need of high consistency in step 1, since step 2 is expected to give the full picture and resolve the contradictions (Schneider and Wagemann 2012: 254).

The coverage value for CHA is 0.83, the coverage value for PRES\*eff is 0.33. This shows that empirically, CHA is more relevant as and outcome-enabling condition than PRES\*eff (all cases with outcome REDD apart from one – Tanzania - also show CHA).

**Step 2: proximate conditions**

Only the configurations leading to outcome 1 where examined.

Table 2: Full Truth table for proximate conditions and enabling conditions of ‘CHA’

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ‘CHA’ | ‘PERFO’ | ‘OWN’ | ‘COAL’ | ‘REDD’ |  |
| 1 | 1 | 1 | 0 | C | Brazil (1), Ethiopia (0), Mozambique (0) |
| 1 | 0 | 1 | 1 | 1 | Guyana |
| 1 | 1 | 1 | 1 | 1 | Peru |
| 1 | 1 | 0 | 0 | 1 | The DRC, Indonesia |
| 1 | 0 | 0 | 1 | ? | *Not observed* |
| 1 | 0 | 1 | 0 | 0 | Vietnam |
| 1 | 1 | 0 | 1 | ? | *Not observed* |
| 1 | 0 | 0 | 0 | 0 | Burkina Faso, Nepal |

**Sufficient conditions**

Result of analysis in this study (run with TOSMANA)

CHA \* PERFO \* coal + CHA\*OWN\*COAL 🡪 REDD

However, this analysis included the contradictory row CHA\*PERFO\*OWN\*coal

**Consistency and coverage**

There is one contradictory row, which encompasses one case with REDD and two cases with redd. Two cases (Ethiopia and Mozambique) now show a configuration identified by us as sufficient, but not the outcome. This would be a classical instance for the “dialogue with the cases” to understand why. This is especially relevant for Mozambique that also has exactly the same remote conditions as Brazil.

The coverage value for CHA \* PERFO \* coal is 0.5 and the coverage value of CHA\*OWN\*COAL is 0.33. This means that the first configuration is empirically more relevant than the second one, and it can explain 50% of all cases with outcome REDD.

Table 3: Full Truth table for proximate conditions and enabling condition of ‘PRESS\*eff’

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ‘PRESS\*eff’ | ‘PERFO’ | ‘OWN’ | ‘COAL’ | ‘REDD’ |  |
| 1 | 0 | 0 | 1 | 1 | Tanzania |
| 1 | 1 | 0 | 0 | 1 | Indonesia |
| 1 | 0 | 1 | 1 |  | *Not observed* |
| 1 | 0 | 1 | 0 |  | *Not observed* |
| 1 | 1 | 0 | 1 |  | *Not observed* |
| 1 | 1 | 1 | 0 |  | *Not observed* |
| 1 | 1 | 1 | 1 |  | *Not observed* |
| 1 | 0 | 0 | 0 |  | *Not observed* |

Here, we have only tow cases and no further logical minimization was possible:

1. *‘PRES\*eff’\*‘PERFO’\*‘own’\*‘coal’ (Indonesia)*
2. *‘PRES\*eff’\*‘perfo’\*‘own’\*‘COAL’ (Tanzania)*

Since every configuration covers only one country, the coverage is low (0.16)