RESEARCH ARTICLE

Indigenous tenure security and local participation in climate mitigation programs: Exploring the institutional gaps of REDD+ implementation in the Peruvian Amazon

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Abstract

The Reduction of Emissions from Deforestation and forest Degradation (REDD+) mechanism faces implementation challenges related to tenure security and governance institutions. In response, multiple regional climate mitigation initiatives have emerged. In Peru, indigenous networks have created their own Indigenous Amazonian REDD (RIA), an initiative aiming to strengthen property rights for native peoples. At roughly the same time, the Peruvian government launched the National Forest Conservation Program (PNCB), a conditional payment scheme aiming to encourage sustainable forest management. However, these initiatives must still overcome fragmented institutional governance of forests at the regional scale and continued challenges related to indigenous tenure security. This article examines how indigenous federations and the Peruvian government are attempting to implement these initiatives in the Amazonian region of Madre de Dios to examine how challenges play out in practice. These cases illustrate the institutional gaps between national policies, regional capacities, and local needs and expectations. However, it also demonstrates how an innovative institutional partnership at the subnational scale may be overcoming some of these challenges.

KEYWORDS
Amazon, indigenous tenure security, institutional gaps, local participation, Peru, REDD+

1 | INTRODUCTION

Forest governance has been increasingly integrated into global climate change strategies, especially since the introduction of the Reduction of Emissions from Deforestation and forest Degradation (REDD) mechanism in 2007 (Singer & Giessen, 2017). When it was created, REDD+ generated suspicion and protests from local actors due to the perceived emphasis on market-based approaches focused on carbon sequestration, the top-down design of proposed mechanisms, and the lack of clarity regarding the treatment of conservation and forest management (Aguilar-Støen, Toni, & Hirsch, 2015; Doherty & Schroeder, 2011). However, the REDD+ mechanism progressively moved toward participatory and jurisdictional approaches by including various social and environmental safeguards (Jodoin, 2017a, 2017b; Savedoff, 2018). REDD+ should enhance cobenefits beyond carbon sequestration such as poverty reduction, biodiversity conservation, indigenous tenure rights and local stakeholders' participation. Moreover, most of the REDD+ funding now comes from public authorities rather than private actors and markets (Jodoin, 2017a, 2017b).

Early on Peru has played an active role in REDD+ development. Peru was recognized as a participant country in the Forest Carbon Partnership Facility in 2008 and its Readiness Preparation Proposal was approved in March 2011. Since 2010, Peru has also been a pilot country participating in the Forest Investment Program (FIP). In 2011, Peru joined the UN-REDD program, and also became a member of the REDD+ Partnership. In addition, in 2013, the Inter-Ethnic Association for the Development of the Peruvian Amazon (AIDESEP) and the Confederation of Amazonian Nationalities of Peru (CONAP), were incorporated in the FIP's Steering Committee.

Peru illustrates the challenges to REDD+ implementation on the ground due to institutional fragmentation. Forest governance in Peru is characterized by multiple public authorities at the national scale, inadequate decentralization toward regional governments, and limited participation of community stakeholders in decision-making processes (Larson, Brockhaus, & Sunderlin, 2012). Insecure tenure further constrains the implementation of REDD+ programs. While Peru has advanced in the recognition of tenure rights for indigenous communities (Monterroso, Cronkleton, Pinedo, & Larson, 2017), much remains to be done. For example, AIDESEP has requested the titling of an additional 20 million hectares of forests and indigenous territories (Espinoza & Feather, 2011). Moreover, community forestry management, which can be seen as a concrete exercise of tenure rights, is not sufficiently promoted by public authorities (Piu & Menton, 2014).

In the same line with the adoption of the Warsaw Framework in 2013 in Poland, a new wave of REDD+ programs has emerged including proposals for safeguards and noncarbon benefits. In Peru, various climate mitigation initiatives addressing these concerns predated this new wave. These include the creation of the Indigenous Amazonian REDD (RIA) in 2011 by indigenous federations to secure property rights and the National Forest Conservation Program (PNCB), in 2010, that offers conditional payments to indigenous communities to promote forest management. In Madre de Dios, these initiatives are promoting interactions among government agencies and indigenous peoples that could improve governance institutions and tenure security for the implementation of REDD+.

This article examines how indigenous federations and the Peruvian government have attempted to fill institutional gaps inhibiting REDD+ local implementation, and how this process has been influencing indigenous tenure security and local participation in climate mitigation programs. We refer to institutional gaps as missing points of articulation in the interplay between institutions across scales that inhibit the flow of information, coordination of actions, and the sharing of responsibilities as well as benefits.

The article is structured into four sections. We first review the REDD+ literature focusing on key aspects of scalar mismatches, tenure security, and governance institutions. This review discusses the relevance of institutional gaps for the study of REDD+ implementation challenges on the ground. Then, we detail the methods used in Madre de Dios including interviews with key actors at the national, subnational, and village level, as well as focus groups in various indigenous communities. The following section discusses both the vertical linkages in the design and implementation of RIA and the PNCB, and

the horizontal interactions among both initiatives as well as their role in filling regional institutional gaps, improving indigenous tenure security, and local participation. The discussion and conclusion sections review remaining institutional challenges to the implementation of REDD+ and their parallel effect on proposed innovations attempting to fill the gap in the regional governance of climate mitigation programs.

2 | INSTITUTIONAL GAPS AND REDD+ IMPLEMENTATION IN THE PERUVIAN AMAZON

2.1 | REDD+ challenges: Scalar mismatches, tenure security, and governance institutions

Since its inception in 2007, REDD+ faced a number of multiscalar challenges related to financial, legal, and institutional aspects (Jodoin, 2017a, 2017b; Lederer, 2012). One overall challenge is related to scalar mismatches between the global design of REDD+ programs, their implementation in national frameworks, and the inclusion of local demands related to livelihoods and tenure security (Larson et al., 2013). The interests and expectations of actors may diverge depending on their scales of action, the legitimacy of their rights, and the level of participation and benefit-sharing (Luttrell et al., 2013). Therefore, REDD+ is less a matter of costs and benefits than a matter of political and social considerations (Mbatu, 2016). For example, indigenous leaders often criticize REDD+ as a top-down and centralized program, due to their exclusion from decision-making processes (Doherty & Schroeder, 2011; Schroeder & McDermott, 2014).

To respond to these scalar mismatches, REDD+ has progressively evolved toward nested, jurisdictional and national approaches, as stated in the 2015 Paris Agreement (Jodoin, 2017a, 2017b). Moreover, safeguards have been designed at the global scale to avoid the possible negative effects of REDD+ on other key sectors such as biodiversity conservation or tenure rights (McDermott, Mahanty, & Schreckenberg, 2013). However, REDD+ implementation continues to face multiple institutional gaps related to tenure security and governance institutions (Mbatu, 2016).

Tenure security could be a major cobenefit of REDD+ programs, in the absence of monetary payments from carbon sequestration (Kowler, Tovar, Ravikumar, & Larson, 2015). REDD+ could provide opportunity for recognizing indigenous peoples and local communities' rights beyond the commodification of carbon rights (Jodoin, 2017a, 2017b; Sunderlin et al., 2018). Tenure security is a multidimensional concept that relies on statutory titling, local authority in decision-making processes, and access to benefits on the ground (Larson, 2010). Forest tenure defines access to forest resources, and determines who owns, uses, manages, and makes decisions about these resources (Larson et al., 2012).

REDD+ and tenure security mutually influence each other in different ways. Securing tenure rights could facilitate the repartition of responsibilities and benefits, and limit the risks of land-grabbing

(McDermott et al., 2013). Alternatively, REDD+ could provide a catalyst for addressing tenure security concerns within emerging national legal frameworks (Larson et al., 2012; Sunderlin et al., 2014). Indeed, a clear repartition of rights is necessary to define who owns carbon, how REDD+ benefits are distributed, how relevant stakeholders participate in decision-making processes, and how conflict management strategies are implemented (Larson et al., 2013). However, researchers have suggested that while REDD+ clearly provides new opportunities for securing local tenure rights, piecemeal interventions by project proponents at the local level are insufficient in the absence of broader, national programs for land tenure reform (Larson et al., 2013).

Because of their negative perceptions of REDD+, indigenous peoples' movements have demanded secured tenure rights as a precondition for REDD+ implementation, and want REDD+ benefits invested to improve land demarcation to discourage invasions by third parties (Wallbott, 2014). Moreover, local and indigenous communities tend to prioritize the development of local livelihoods over the objectives of forest conservation and carbon sequestration. For example, there is little clarity on how to include community forestry management beyond conservation, and significant risk that initiatives could exacerbate inequalities within local communities (Cronkleton, Bray, & Medina, 2011). Finally, indigenous peoples have great concern that their historical marginalization with forest governance institutions will continue under REDD+ programs (Sunderlin et al., 2014).

The second set of challenges related to REDD+ implementation refers to the design of governance institutions (Mbatu, 2016). Researchers have pointed out that REDD+ is more than keeping carbon in the forests, it is about how global forests are governed (Lederer, 2012). Indeed, authors suggest that REDD+ success and failures depend less on technical aspects than on the design of governance mechanisms at multiple scales taking into account the interplays between global norms, national policies and local rights (Corbera & Schroeder, 2011). For some authors, REDD+ is essentially a matter of multilevel governance including flows of information, interests of actors and transparency (Angelsen, Brockhaus, Sunderlin, & Verchot, 2012). As Ravikumar et al. (2015, 2) have noted, "though the shift to a nested, jurisdictional or national REDD+ is sometimes approached as a technical design issue, this must be accompanied by an understanding of the interests and power relations among actors at different levels."

Finally, the lack of capacity in regional government due to ineffective decentralization could lead to recentralization and the risk that communities could be excluded when REDD+ initiatives are implemented (Phelps, Webb, & Agrawal, 2010). On the contrary, community networks and government-led programs do have roles in ensuring local participation in climate mitigation governance institutions (Bolin, Lawrence, & Leggett, 2013). However, indigenous networks have limited capacity to ensure forest tenure security and local participation due to their lack of cohesion and authority (Cronkleton et al., 2011), or the existence of local inequalities among communities (Van Dam, 2011).

2.2 | Institutional gaps in REDD+ implementation on the ground

Scalar mismatches are central to the analysis of the emergence and implementation of regional REDD+ initiatives. In the field of political geography, scale has been defined as a social construct and an interaction process through power relations among actors (Smith, 2008; Swyngedouw, 2004). According to Masson (2009), "the subsequent constitution and transformation of scales is the result of sociopolitical projects, struggles and contestations between actors involved in power relations."

Distinct processes in rescaled governance include vertical links between governmental scales and horizontal links across regions, sectors, and networks (Andonova & Mitchell, 2010). Cash et al. (2006) identify three institutional solutions to respond to cross-scale linkages: institutional interplay, comanagement, and boundary or bridging organizations. These three institutional arrangements can be implemented by different actors in response to scalar mismatches in the implementation of REDD+.

Vertical scalar arrangements refer to linkages among institutional levels of governance. By examining regional/national dynamics, we can highlight avenues or barriers to the recognition of the two programs by national and regional public policies. Conversely, a focus on regional/local dynamics considers the correspondence between the two programs and local perceptions and needs. Our study of vertical arrangements allows us to observe the mismatches and missing links between actors at particular scales.

Horizontal linkages at the regional scale examine interactions between both actors and programs including the innovations or conflicts that emerge. This can mean comanagement through the establishment of partnerships among actors to avoid overlaps between institutions and scales of action (Armitage, 2007). Similarly, secondary-level community networks occur when partnerships between community organizations are established at the subnational scale (Bray, Duran, & Molina, 2012; Cronkleton et al., 2011; Paudel, Cronkleton, & Monterroso, 2012).

More broadly, institutional gaps appear in the interplay between national policies, regional institutions, and local needs and expectations regarding REDD+ implementation and performance on the ground. Specific challenges relating to institutional gaps that have been identified from the empirical analysis of REDD+ implementation in the Peruvian Amazon, as further developed, are effectiveness and capacity-building, legitimacy, beneficiaries' inclusion in decision-making processes, information mechanisms, accountability, and cohesion (Giudice, Börner, Wunder, & Cisneros, 2019).

2.3 | The emergence of regional climate mitigation initiatives in Peru

REDD+ mechanisms are central to Peru's climate change mitigation strategy as deforestation is the principal source of carbon emissions in the country. However, the country's forest sector institutions are

highly fragmented, which has hampered the design and implementation of REDD+ programs. Peru lacks a consolidated national policy to provide forest sector incentives or to discourage the conversion of forests to nonforest uses, such as agro-industry, mining, or oil exploitation (Larson et al., 2012). There is also a high degree of disarticulation among ministries, and other government agencies at different scales related to forest policy, which limits REDD+ implementation (Kowler et al., 2015; Piu & Menton, 2014).

Peru has decentralized many key functions to regional governments without granting them the sufficient financial and technical capacities to fulfill their new responsibilities (Kowler, Ravikumar, Larson, Rodriguez-Ward, & Burga, 2016). The incongruence between strong national institutional capacities and weak regional scale capacities to implement REDD+ locally creates regional institutional gaps. However, the disarticulation between agencies is exacerbated when some national agency staff perceive the weak capacity of regional governments as a key factor in the expansion of deforestation.

For example, between 2006 and 2010, a series of decrees transferred the authority to grant collective land titles from the Ministry of Agriculture (MINAGRI) to the regional agriculture directorates (Monterroso et al., 2017). In addition, the Ministry of Environment (MINAM) transferred land-use planning powers to regional governments, which included the powers to authorize land-use change; to approve forest management plans; and to ensure compliance with national forest policy (Kowler et al., 2016).

Peru's Madre de Dios region was one of two pilot sites selected by MINAM for the implementation of REDD+ (the other region being San Martin). However, ill-defined property rights in the region have produced overlapping boundaries between mining concessions, protected areas, brazil nuts concessions, timber concessions, and native communities (Chavez et al., 2012), which complicates efforts to allocate carbon rights and responsibilities for forest conservation. Deforestation in the region is driven by road construction, gold mining, agricultural expansion, forest fires, and migration as well as demographic growth (Piu & Menton, 2014). Small-scale gold-mining is still the most attractive land use in Madre de Dios complicating the development of more sustainable forest uses (Rodriguez-Ward, Larson, & Ruesta, 2018). When REDD+ demonstration activities appeared in this context, they generated suspicion among indigenous communities, which challenged the future implementation of climate mitigation programs (Garrish, Perales, Duchelle, & Cronkleton, 2014; Piu & Menton, 2014).

Since 2008, global indigenous leaders have used the slogan "No rights, no REDD!" to express concern with REDD+ negotiations (Claeys & Delgado Pugley, 2017). One of the main opponents to REDD+ was the Coordinator of Indigenous Organizations of the Amazon River Basin (COICA), a transnational network representing nine national indigenous federations created in 1984 to support regional struggles for titling of indigenous communities. COICA used the "No rights, no REDD!" campaign to advance on its own agenda on territorial security, leading to the later inclusion of cobenefits (Howell, 2014). Resistance to REDD+ opened new political

opportunities for indigenous representatives to participate in REDD+ debates (Wallbott, 2014). As a result of this evolution, COICA shifted from being a radical opponent to being a proactive participant viewing REDD+ as an opportunity to pursue its own agenda on territorial rights recognition (Espinoza & Feather, 2011).

In 2011, COICA, in collaboration with AIDESEP, created the Indigenous Amazonian REDD+ (RIA). This initiative supports indigenous peoples' demands for 100 million hectares of forests in the Amazon, and more specifically the titling of approximately 1,240 native communities in Peru (Espinoza & Feather, 2011). RIA's objectives were to facilitate the participation by indigenous peoples in climate mitigation programs under national public policies and to finance the titling of indigenous territories.

The first RIA pilot project was started in 2011 by a regional member of AIDESEP, the Native Federation of Madre de Dios (FENAMAD), in the Amarakaeri Communal Reserve (RCA) in Madre de Dios. FENAMAD, which was created in 1982, represents 33 communities with five ethnic groups and consists of two intermediary federations: the Harakbut, Yine, Machiguenga Council (COHARYIMA), and the Indigenous Council of lower Madre de Dios (COINBAMAD). Another member of FENAMAD, the Indigenous Forest Association of Madre de Dios (AFIMAD) was created in 2008 to improve productive activities in the lower Madre de Dios watershed.

The RCA, created in 2002, is a comanaged natural area overseen by the National Secretary of Natural Protected Areas (SERNANP) and 10 indigenous communities. These communities are represented by the reserve's management organization. The management organization is a technical body that facilitates indigenous communities' participation, promotes the sustainable management of natural resources and supports biological and cultural diversity.

The Peruvian government created another initiative to reduce deforestation in 2010, the National Forest Conservation Program (PNCB) (Cossio, Menton, Cronkleton, & Larson, 2014). The PNCB emerged in response to political concerns that MINAM needed to regain the confidence of indigenous peoples after the 2009 conflict, known as "Baguazo" (Che Piu & Menton, 2014). The PNCB is a conditional payment scheme for native communities that provides an annual direct transfers of PEN 10 (about USD 3.80) for each hectare of forest enrolled in the program with the understanding that the community will conserve or sustainably manage these forest areas. The PNCB program targets titled indigenous communities that have consolidated administrative capacities and are designated legitimate rights holders. It expects that the conditional payments provided will be used for sustainable forest management and encourages participating communities to develop forest investment plans. The PNCB's initial objective was to preserve 54 million hectares of forest and to contribute to GHG reduction from deforestation in the country. The PNCB has benefited from operational autonomy inside MINAM (Interview with national coordinator in Lima, Peru, January 20, 2016). The program's budget increased by 50% between 2010 and 2016. However, this is still insufficient to enlarge the program beyond the 6% of eligible communities it serves (Interview in Lima, Peru, January 20, 2016).

Beyond the evolution of its internal structure and functions, the PNCB acquired an increasing role coordinating national forests and climate policies. The program led the development of Peru's national strategy on forests and climate change, as part of the international agreement in the framework of the 21st Conference of the Parties (COP21). The PNCB, as part of the MINAM, is now officially recognized by United Nations Framework Convention on Climate Change (UNFCCC) as the focal point for the national implementation of REDD+ and its related mechanisms. Whereas the PNCB has operational autonomy within MINAM and serves as an intersectorial body coordinating national efforts to reduce deforestation, it still lacks the capacity to deal with institutional fragmentation within the national government.

By 2018, the PNCB was providing financial incentives to more than 200 indigenous communities of 12 regions, representing approximately 2 million hectares of forests. However, Giudice et al. (2019: 1) point out that "conservation effects on contracted land were negligible because communities were not chosen according to high deforestation threats, and they self-enrolled low-pressure forest areas for conservation." The PNCB started to work in Madre de Dios only in 2016 after gaining experience in other regions such as Loreto and Ucayali. PNCB planners could use the experience gained in other regions as a starting point for improving collaboration and communication strategy when entering Madre de Dios.

3 | METHODS

The analysis presented in this article was conducted in collaboration with a broader global comparative study of tenure reform (GCS-Tenure) led by the Center for International Forestry Research (CIFOR). The GCS-Tenure project analyzed the implementation of tenure reforms and the impact of these reforms on intended beneficiaries. It also analyzed whether tenure security of forest dependent communities had been strengthened, especially in reference to women and marginalized community members, and attempted to identify how outcomes had emerged from the process of reform implementation.

In Madre de Dios, the GCS-Tenure project examined 10 indigenous communities that had been titled between the 1970s and the 1990s. All of these communities were along the Madre de Dios River, with half of the selected communities located within the more accessible lower watershed, while the remainder where in the more remote upper watershed. Figure 1 illustrates the location of selected communities and the position of the RCA which covers 402.336 ha. The communities located around the RCA fall under the communal reserve's special regime granting them the right to administer the reserve as the main beneficiaries of the conservation area.

This research analyzes 20 semi-structured interviews (Appendix S2) conducted between October 2015 and June 2016 with key leaders of indigenous federations, NGO practitioners and decision
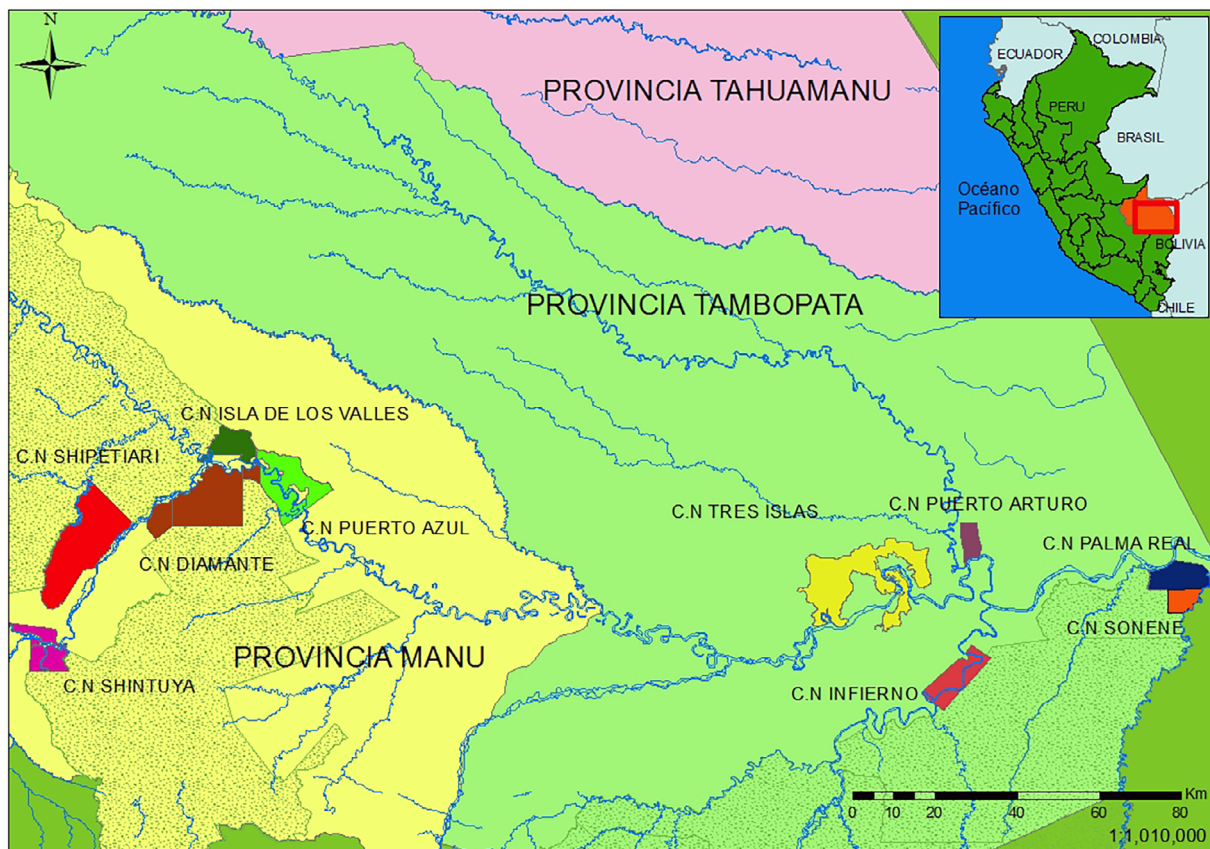

FIGURE 1 Native communities selected for Center for International Forestry Research's Global Comparative Study-Tenure project in Peru.
Source: Center for International Forestry Research [Colour figure can be viewed at wileyonlinelibrary.com]

makers in national agencies in Lima and regional agencies in Puerto Maldonado. Regarding RIA, 11 interviews were conducted at the subnational level with regional indigenous federations and NGOs, and three at the national and international level with AIDESEP and COICA. Regarding the PNCB, two interviews were conducted at the subnational level with regional authorities, and four at the national and international level with national authorities of the MINAM. These interviewees include both proponents and opponents to RIA and the PNCB.

The authors accompanied the GCS-Tenure team in the field over 8 days in the indigenous villages of *Infierno* and *Tres Islas*. These visits provided the authors with participant observation opportunities and allowed them to observe discussions of tenure reforms among focus group participants, and conduct semi-structured interviews with seven residents about their perceptions of tenure security (Appendix S2). Later, the authors were able to draw on results from all the village level focus group interviews and key informants interviews collected by the CIFOR team. The focus groups interviews were aimed to collect data on the tenure and forest rights components and their respective transformations in the context of tenure reforms in Peru. In addition, the lead author accompanied AIDESEP's representatives and observed their participation in national events and during COP21 in Paris. Subsequently key information has been updated through grey literature and media coverage analysis related to the institutional development of RIA and PNCB and progresses in Madre de Dios.

The authors used a critical discourse analysis (Fairclough, 2013) method to identify interviewees' perceptions, key arguments, and imaginaries on REDD+, climate mitigation programs and indigenous tenure security. Particular attention was paid to power relations and social representations on tenure security, forest conservation, and climate mitigation programs.

4 | THE INSTITUTIONAL GAPS AT PLAY IN REDD+ IMPLEMENTATION IN MADRE DE DIOS

4.1 | Scaling-down RIA: The Amarakaeri pilot project

AIDESEP selected the RCA as the first pilot project for RIA implementation because the RCA was perceived as the most consolidated of the 10 communal reserves in Peru. The RCA had an established comanagement structure with the SERNANP, and its management organization was believed to have strong organizational capacities due to the degree of representativeness and involvement of its constituents. One SERNANP specialist on forest management explained that the political and institutional capacity of RCA communities was apparent in their activism struggling for rights and to claim their territory (Interview in Puerto Maldonado, Peru, February 15, 2016). Given local capacities and dynamics, the RCA seemed to offer an opportunity to test RIA and make it a more robust and sustainable initiative.

Under the RCA-RIA pilot project, FENAMAD is designing territorial indicators to measure forest conservation, as part of the strategy to go beyond REDD+ carbon indicators. The most important territorial indicator is the number of indigenous communities titled. In fact, FENAMAD and AIDESEP consider legally recognized territories with clear boundaries to automatically contribute to forest conservation and carbon sequestration. The territorial indicators, called "living hectare" or *hectarea viva*, not only aim to measure carbon sequestration but also ecosystemic services. This means that one living hectare of forest is possibly composed by 24 ecosystemic functions, including for example water preservation and biodiversity conservation.

The RCA was originally based on an ancestral vision of the territory that links several indigenous communities in the same naturally and culturally coherent space. FENAMAD considers culture as a priority function, as it encourages indigenous peoples to maintain their forests. With that concept in mind, FENAMAD developed a cultural map that identifies spiritual places, myths, and historical movements of the Harakbut people within the RCA. The president of the reserve's management organization explained that "the cultural mapping was intended to demonstrate to SERNANP that we have been living here. We want the Ministry of Culture to recognize the Harakbut territory as a cultural patrimony" (Interview in Puerto Maldonado, Peru, February 15, 2016).

However, a major institutional gap facing FENAMAD is the weak decentralization process of RCA-RIA, which has not built the capacity of indigenous communities to effectively ensure the direct management of climate funds on the ground. Indeed, FENAMAD depends on global and national funding arrangements and is accountable to these donors, and has not overcome operational challenges that would allow the direct management of funds by indigenous communities. To break with this dependence, FENAMAD is trying to scale-down RIA from the national to the regional level by having it debated inside the regional indigenous REDD+ roundtable of Madre de Dios. This roundtable was created in 2013 as a dialogue arena to fundraise around REDD+ and indigenous concerns in the region. Participants included representatives from national and regional governments, international and regional NGOs, universities, and indigenous federations. The roundtable venue hosted a participatory process to discuss safeguards for the implementation of RIA.

The revision of the RCA 2016–2020 Master Plan represented an opportunity for FENAMAD to institutionalize RIA as a comanagement agreement with SERNANP. A main objective was to improve the capacities and effectiveness of the communal forest guards and to strengthen the deforestation monitoring system. The RCA director valued the new shared territorial strategy, which combined the capacities of communal and government-led forest guards for a more effective monitoring of the RCA. Indeed, there were only 12 SERNANP guards whereas the communal guards would increase the number to 32 members (Interview in Puerto Maldonado, Peru, February 15, 2016).

However, opposition from the regional government restrained the scaling-down process and comanagement of the RCA-RIA initiative. The former vice-president of FENAMAD mentioned how "the regional government has a negative perception of FENAMAD because

of an anti-indigenous position. The regional governor officially announced the decision of the regional government to not title nor extend native communities" (Interview in Puerto Maldonado, Peru, October 21, 2015). That governor was known for his pro-mining position, which opposed the social and environmental agenda associated with the RCA-RIA pilot.

The RCA-RIA pilot also generated political tensions among indigenous communities due to local negative perceptions of FENAMAD's representativeness and diverging interests regarding local livelihoods. Fieldwork in the RCA community of Tres Islas revealed the complex dynamic associated with the implementation of RIA at the local level. During focus group interviews, informants mentioned the decreasing legitimacy of FENAMAD in the region, after having initially played a strong role in the titling of communities and creating statutes. Some community members criticized the lack of support from FENAMAD during conflicts. Others requested a more technical approach to support the political autonomy of their community.

Furthermore, FENAMAD had to deal with distrust and confusion associated with the lack of transparency and understanding of RIA. In the RCA, these perceptions emerged around a conflict over road construction through the buffer zone of the Manu National Park and connecting to some villages in the RCA. The Madre de Dios regional government had initiated this road, but opponents denounced the potential environmental impacts of the road on the protected area, as well as the lack of planning and consultation with effected communities. FENAMAD had opposed the road construction on conservation grounds. However, according to key informants and focus group participants, many community members believed that the road would open market access and bring economic opportunity related to mining and timber extraction. Eventually, in 2016, MINAM stopped road construction.

Moreover, informants reported that some communities criticized FENAMAD because of a perceived bias toward the Harakbut people. Indeed, between 2013 and 2015, the president of the federation, the president of COHARYIMA and the director of the reserve's management organization all belonged to the Harakbut ethnic group. These Harakbut leaders have oriented the projects during this period on territorial security, the cultural mapping of the RCA and the reserve for uncontacted indigenous communities, leaving aside the downstream communities. To respond to these critics, FENAMAD is trying to replicate RCA-RIA in communal reserves where other ethnicities predominate.

These disputes created an unfavorable regional context for the acceptance and implementation of RCA-RIA in Madre de Dios. The ethnic bias, the favoritism evident in the over-investment in RCA and the suspicion that project funds are poorly managed explain FENAMAD's slow progress introducing RIA in other indigenous communities. The federation's incapacity or unwillingness to effectively disseminate information locally to indigenous communities and to engage with residents to increase transparency in planning created serious institutional gaps when the intended beneficiaries did not identify with the initiative. FENAMAD is also facing an institutional gap because of its needs to adopt conservation objectives to participate in international dialogue, which contradicts local development goals.

4.2 | PNCB multilevel fragmentation

The PNCB started working in Madre de Dios in 2016. By the end of 2017 the program had established agreements with 13 indigenous communities. Five of these communities were located in the buffer zone of the RCA. For these cases the RCA's management organization was the local implementation partner. The other indigenous communities are located in lower Madre de Dios so the program's main local partner was the AFIMAD.

The PNCB supports local implementation partners to collaborate with NGOs to consolidate productive activities in indigenous communities. Concretely, this strategy implies additional formal agreements between the program and the selected NGOs to include the existing activities in the communities' investment plans or to provide additional funding for the effectiveness and long-term implementation of the activities. For example, PNCB and AFIMAD are promoting productive activities such as Brazil nuts exploitation and organic certification with the support of the Amazon Conservation Association (ACCA) in some communities, or timber management plans with the support of Rainforest Alliance in other communities.

The PNCB provides direct benefits that can be invested in forest management and production. As a result, this strategy has inoculated the program from the criticism leveled at REDD+ initiatives that are seen as primarily focused on conservation and a reduction of land use driving forest conversion. One GIZ technician explained how the program is focused on productive and concrete benefits compatible with forest conservation to convince communities to get involved (Interview in Lima, Peru, January 14, 2016).

The president of AFIMAD illustrated this shift in perspective by comparing the PNCB to an earlier project: "we prepared a REDD+ pilot project with WWF. However, the process was complex and difficult to understand. The REDD+ project was perceived as a threat to our territories so we abandoned it. We are now part of another program that is not as strict as the earlier REDD+ initiative, which did not allow the forest to be touched" (Interview in Puerto Maldonado, Peru, October 20, 2016).

To effectively implement the program, the PNCB adopted a coordinated strategy of communication and information diffusion to indigenous communities. The PNCB's national coordinator stated that "if you put more requirements and you make it more expensive, you make it less attractive. If you aim to work with communities, you should try to make it the cheapest and simplest model possible" (Interview in Lima, Peru, January 20, 2016). As a result of this new communication strategy and the visibility of the direct monetary incentive, there is greater acceptance of the program by indigenous communities.

However, beyond its acceptance and implementation in some communities, the PNCB lacked a permanent regional presence to ensure institutional sustainability in indigenous communities. The program initially entered directly into indigenous communities without an official regional agreement with indigenous federations. A key weakness in the PNCB strategy is that they had only limited control over

how the funding was used once transferred. This problem was exacerbated by the varied administrative capacities of indigenous community institutions and leadership. One GIZ technician explained that some participating communities in the case of Loreto could not manage the money and did not understand the purpose, so lost the funding after the first year (Interview in Lima, Peru, January 14, 2016).

To respond to these limitations, in 2017 the PNCB inaugurated a regional office in Madre de Dios, following the successful experiences conducted in other regions. The objective was to improve the regional coordination between the program, the indigenous communities and the other actors involved. Nonetheless, the PNCB had not yet succeeded in signing a formal agreement with the regional government of Madre de Dios, being the only regional government missing among the 12 in total.

Therefore, the implementation of the PNCB in Madre de Dios was constrained by its lack of local presence and the resulting difficulty to train indigenous communities and monitor the outcomes. While indigenous communities welcomed the program's technical component focused on livelihoods, the challenge of building financial and technical capacity of regional government and indigenous communities jeopardized the effective management of funds and the sustainability of the program. After evaluating success and failure in other regions, the PNCB decided to adopt a new strategy that would correspond with their expansion into Madre de Dios.

4.3 | A new comanagement partnership between RIA and the PNCB

While the national recognition has raised the profile of RIA and the PNCB, it has been a challenge to scale-down the institutionalization process at the regional scale due to a variety institutional gaps and political struggles. For FENAMAD, the RCA provides a regional space for political negotiations and a better inclusion in national policies. For MINAM, the implementation of the program in Madre de Dios provides a new opportunity to improve its relationship with indigenous communities in a conflictive political context. We now discuss a regional comanagement institution that emerged to fill the regional institutional gaps facing RIA and the PNCB. Through the analysis of horizontal arrangements, we aim to highlight how the different actors negotiate institutional gaps across scales.

In December 2015, MINAM and FENAMAD officially signed an agreement to facilitate the implementation of the PNCB in Madre de Dios and the articulation with other existing programs, including RIA. This agreement was part of the new strategy implemented by the PNCB to work in partnership with local NGOs, including ACCA, Rainforest Alliance, and indigenous federations including FENAMAD, COINBAMAD, COHARYIMA, and AFIMAD. Both initiatives progressively recognized their shared interest to collaborate and respond to constraints faced in Madre de Dios to improve the implementation of their programs in indigenous communities.

On the one hand, FENAMAD is perceived as a safeguard for the sustainability of the PNCB. The PNCB's national coordinator mentioned

that the advantage of having an official partnership with FENAMAD is to provide oversight and institutional capacity for the implementation of the program. Moreover, the federation brings logistical support to the program, for example, the ability to convene communities for meetings or to provide boats to access remote communities.

The PNCB also recognizes the value of FENAMAD's political approach to tenure security defended through RIA. RIA complements the PNCB's approach with ecosystemic services beyond carbon by defining concrete territorial indicators, as an example of horizontal linkages. Moreover, FENAMAD has close familiarity with the communities and residents, and as a result is aware of internal divisions between interest groups and existing conflicts within and between communities, key issues that could undercut PNCB agreements if not taken into consideration.

On the other hand, the new partnership with the PNCB is an opportunity for FENAMAD to strengthen and legitimize its territorial presence through a concrete economic project. The objective is to transform the role of FENAMAD beyond a safeguard toward a real actor in charge of the sustainable implementation of the program. The productive approach of the PNCB helps FENAMAD go beyond political demands, which are sometimes difficult to concretely implement.

Therefore, the PNCB's monetary incentives represent a concrete value for communities while FENAMAD keeps consolidating its RCA-RIA initiative and funds. The president of the reserve's management organization mentioned the interest of the economic incentives "for communities to see something real, to have an investment plan through the program's support, to prioritize their investments, or to generate economic opportunity through tourism or Brazil nuts collection in the community" (Interview in Puerto Maldonado, Peru, February 15, 2016).

AFIMAD played a strategic role in the early stage implementation of the PNCB in Madre de Dios. As FENAMAD was perceived as a gate-keeper, AFIMAD started working directly with the PNCB. The actual partnership between the PNCB and FENAMAD can be interpreted as an indirect influence from AFIMAD. The inclusion of AFIMAD as a strategic associate in this partnership could be an opportunity for FENAMAD to regain the confidence of communities in the lower Madre de Dios to implement RCA-RIA in this area in the future. Therefore, AFIMAD facilitated PNCB down-scaling process and reduced the distance for the direct participation of indigenous communities in national climate mitigation programs.

Moreover, the collaborative arrangement with the PNCB could help FENAMAD ensure sustainability during political turnover. Normally, when there is political turnover in the FENAMAD executive committee, there can be a shift in capacities and a lack of continuity that could challenge project sustainability. Such political concerns could also compromise the effectiveness and sustainability of the program. The national coordinator explained his fears "about the possible politicization of the process because indigenous organizations are a political instrument. This is money and the federation could influence where it is going or what should be financed. It could be used not for technical purposes but in response to political criteria" (Interview in Lima, Peru, January 20, 2016).

The emergence of a comanagement partnership between the PNCB and FENAMAD could improve indigenous tenure security in several ways. Comanagement at the regional scale ensures the inclusion of local political considerations in government-led climate change mitigation programs designed at the national scale. It could potentially strengthen FENAMAD's territorial presence and legitimacy as a strong authority able to guarantee the rights of indigenous communities. In addition, because of the comanagement agreement RIA's political initiative is strengthened through concrete technical instruments and economic incentives. This could improve indigenous communities' productive development and livelihoods, key for the exercise of tenure rights.

Finally, the new comanagement partnership between FENAMAD and MINAM in Madre de Dios directly responds to the vertical institutional gaps identified in the previous sections. This partnership resolves FENAMAD's legitimacy problem due to perceived political bias in its treatment of indigenous communities and the lack of investment in productive activities. FENAMAD, as a permanent regional institution, also responds to the lack of regional presence of MINAM limiting the possibility to accompany and monitor the program implementation.

5 | DISCUSSION

The analysis of the Peruvian case study illustrates the existence of various institutional gaps in the implementation of subnational climate mitigation programs, regarding the scales of action, the legitimacy of local rights and the level of participation and benefit-sharing (Luttrell et al., 2013). In the following paragraphs, we discuss the vertical and horizontal linkages faced by the actors while implementing subnational climate mitigation programs on the ground.

A first set of institutional gaps concerns vertical linkages. While the new wave of REDD+ programs recognized by national authorities has emerged under participatory and jurisdictional approaches including social and environmental safeguards (Jodoin, 2017a, 2017b; Savedoff, 2018), these tend to face weakness in regional and local institutional governance, which risks long-term sustainability. As a result, well intentioned initiatives must engage regional indigenous federations and government authorities that lack territorial legitimacy and the capacity to effectively control local investments in forest conservation.

Another major vertical linkages identified is the lack of decentralization and capacity-building for regional governments to implement and coordinate subnational climate mitigation programs. This is due to the high institutional fragmentation of forest governance in many Latin American countries (Aguilar-Støen et al., 2015). Additionally, the regional indigenous federations often lack sufficient resources to directly manage climate funds, even though this is one of their main demands (Claeys & Delgado Pugley, 2017). The design of REDD+ governance institutions at the national, regional and local levels should not be considered as a simple technical issue and should rather be associated with an analysis of the power relations and diverging interests among actors at different scales (Ravikumar et al., 2015).

A second set of institutional gaps refers to horizontal linkages. Regarding indigenous tenure rights, the problems of legitimacy and territorial presence experienced by national government authorities and indigenous federations is limiting the full exercise of these rights on the ground. To respond to these gaps, comanagement partnerships between indigenous federations and government authorities stand as a potential solution. On the one hand, through comanagement, regional indigenous federations can strengthen their capacity to guarantee rights as well as economic and technical opportunities for indigenous communities to improve their territorial development. This contributes to clarify how community forestry management in climate mitigation programs could move beyond a singular focus on conservation (Cronkleton et al., 2011). Improved partnerships could contribute to scaling-down national climate mitigation programs on the territories and improve local participation in these programs.

Nonetheless, as pointed out by Larson et al. (2013), while REDD+ clearly provides new opportunities for securing indigenous tenure rights, disarticulated interventions by project proponents at the local level are insufficient in the absence of broader national programs for land tenure reforms. This is central for the indigenous peoples who demand the transformation of their historical marginalization with national forest governance institutions beyond the implementation of specific REDD+ programs (Sunderlin et al., 2014).

6 | CONCLUSION

This article examined how indigenous federations and the Peruvian government are negotiating to fill institutional gaps that inhibit local REDD+ implementation, and how this process is influencing indigenous tenure security and local participation. We referred to institutional gaps as the missing points of articulation in the interplay between institutions across scales that inhibit the flow of information, coordination of actions and the sharing of responsibilities as well as benefits.

We used two different cases in the region of Madre de Dios in Peru to discuss the problem, being the RIA pilot project in the RCA and the PNCB. The analysis of the strategies used by proponents of these programs to facilitate the interaction of weak and sometimes antagonistic intermediate-level institutions in Madre de Dios illustrated effective approaches to negotiate new comanagement institutions throughout Peru. We identified the particular institutional arrangements on REDD+ preventing or improving indigenous tenure security and local participation in its implementation.

The analysis of REDD+ implementation in Peru at the subnational level confirms findings from studies carried out in other regions showing how climate mitigation programs represent opportunities for local and indigenous communities to improve multiscale participation, livelihoods and productive development compatible with forest conservation goals, State-communities relationships and land tenure security. Unclear and conflicting tenure has been the main challenge faced while implementing subnational REDD+ initiatives. Nonetheless, subnational REDD+ initiatives also stand as a possible solution to tenure

insecurity (Sunderlin et al., 2018). Moreover, local and indigenous communities benefitted from the positive evolution of international legal frameworks toward participatory and jurisdictional approaches of REDD+ (Jodoin, 2017a, 2017b). However, there is still little evidence of a substantial positive effect of REDD+ on improving local tenure security in tropical forest countries (Sunderlin et al., 2018).

Finally, the multilevel analysis conducted in this article revealed that nested approaches of REDD+, as normatively defined at the global scale, are facing a number of concrete challenges on the ground. The existence of competing agendas among actors within and between scales, and the differentiated levels of resources among actors, complicate the implementation of climate mitigation programs on the ground. Governments have to deal with the lack of indigenous communities' confidence regarding the State and international experts who have dominated the processes of REDD+ design and authority. Indigenous federations also face political tensions emerging from the grassroots in the other countries of RIA experimentation, such as Ecuador and Colombia. Beyond the claim of a direct management of climate funds, indigenous federations often have to collaborate with other actors in order to ensure the sustainability and acceptance of their initiatives. Nonetheless, the innovative institutional arrangements illustrated by the case study presented here could provide interesting lessons for others interested in resolving institutional gaps.

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ENDNOTES

[1] https://unfccc.int/topics/land-use/resources/warsaw-framework-for-redd-plus.

[2] "Estrategia Nacional sobre Bosques y Cambio Climático," Decreto Supremo N°007-2016-MINAM.

[3] Comments heard several times by author during public events: "Cambio climático y transformación de los bosques. Desafíos para los Gobiernos Regionales tras el Acuerdo de París," DAR, Lima, April 26, 2016; "Coloquio Internacional sobre Reformas de Tenencia en Tierras Forestales," CIFOR, Lima, 03/05/2016.

[4] The Ministry of Agriculture (MINAGRI) of Peru is implementing until 2020 the project "Catastro, Titulación y Registro de Tierras Rurales en el Perú, Tercera Etapa" (PTRT3). The objective is to title around 400 native communities in the Peruvian Amazon.

[5] These groups are the Harakbut, Yine, Machiguenga, Shipibo, and Ese Eja.

[6] The 10 communities are Barranco Chico, Boca Ishiriwe, Diamante, Masenawa, Puerto Azul, Puerto Luz, Queros, San Jose de Karene, Shintuya, Shipetiari.

[7] It is known in Spanish as the Ejecutor del Contrato de Administración de la Reserva Comunal Amarakaeri (ECA-RCA).

[8] http://www.bosques.gob.pe/programa-bosques.

[9] Estrategia Nacional sobre Bosques y Cambio Climático," Decreto Supremo N°007-2016-MINAM.

[10] http://bosques.gob.pe/punto-focal-de-redd.

[11] Those regions were Amazonas, Cusco, Huánuco, Junín, Lambayeque, Loreto, Madre de Dios, Pasco, Piura, San Martin, Tumbes, and Ucayali.

[12] http://www.bosques.gob.pe/avances-y-logros.

[13] Information about this project, known as the "Tenure Security and Forest-dependent Communities: A Global Comparative Study," or the GCS-Tenure project, can be found here https://www.cifor.org/library/5472/.

[14] The authors have maintained the anonymity of informants due to the conflictive nature of REDD+ and climate mitigation programs in the Peruvian context.

[15] Presentation of the Harakbut cultural map, Lima, Peru, September 21, 2015; *Presentación Perú hacia COP21: Análisis de las Contribuciones Nacionales (INDC) frente al Cambio Climático, Lima, Peru, September 22, 2015*; MDE Saweto Perú, acción indígena frente al cambio climático, Lima, Peru, 09/10/2015.

[16] AIDESEP presentations during COP21 between November 31, 2015 and December 11, 2015 including "Genero y cambio climático," at the Pabellón Perú; "REDD+ Indígena Amazónico," at the Pabellón Indígena; "MRV Indígena," in the COP Official zone.

[17] The other nine reserves are: Yanesha, El Sira, Ashaninka, Machiguenga, Purus, Tuntanain, Chayu Nain, Airo Pai, and Huimeki.

[18] "Las Reservas de Carbono Forestal Tropical en Territorios Indígenas: Un Análisis Global," COICA, AMPB, REPALEAC, AMAN, EDF, Noviembre 2015.

[19] "Millenium Ecosystem Assessment Report," 2005.

[20] "Taller Regional sobre Introducción a las Salvaguardas y Estatus del Sistema Nacional de Información de Salvaguardas para REDD+," Puerto Maldonado, 23 Agosto 2013.

[21] The five communities in the buffer zone were Puerto Azul, Shintuya, Diamante, Shipetiari, and Isla de Los Valles.

[22] The eight communities in the lower Madre de Dios were Boca Isiriwe, Sonene, Palma Real, Infierno, Boca Pariamanu, Puerto Arturo, Palotoa Teparo, and Monte Salvado.

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