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REDD+ policy implementation and institutional interplay

Evidence from three pilot projects in Cameroon

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1 Introduction

Anthropogenic land-use change and deforestation account for 12-20% of global greenhouse gas emissions and mainly originate from tropical forest-rich developing countries (Pachauri et al. 2014). Hence, reducing emissions from the forest sector has become a priority for the international climate change regime (IPCC 2007). Since the 2007 Conference of the Parties (CoP) to the United Nations Framework Convention on Climate change (UNFCCC), an incentive mechanism to reward developing countries for maintaining and expanding forest carbon sinks, known as Reducing Emissions from Deforestation and forest Degradation (REDD+), has been rolled out in many tropical forest-rich countries (Irmeli et al. 2012).

Cameroon has one of the largest forest areas and highest deforestation rates in the Congo Basin (MINFOF 2012). The country engaged in REDD+ negotiations from early on and started readiness activities and pilot projects in 2008. REDD+ pilots have proliferated worldwide, but their implementation has been mired by many challenges. Tenure conflicts are reported from across REDD+ projects, but while in some cases such conflicts hamper project sustainability (Lasco et al. 2013), in others, REDD+ projects are successfully implemented despite unclear tenure (Resosudarmo et al. 2014). To explain such differences in project performance, we need to understand implementation contexts (Matland 1995). In this study, we demonstrate how implementation contexts or typologies determine the most influential factors for REDD+ projects.

Equally recurrent in REDD+ projects are equity concerns, including how contentious revenue distribution in forestry institutions influence REDD+ outcomes (Jacob and Brockington 2017, Awung and Marchant 2020). Indeed, interrelated institutions such as climate change and forestry have the potential to interact and impact each other's performances (Underdal 2008, Bastos Lima et al. 2017). While such interactions can be mutually reinforcing, they can also be disruptive (Rosendal 2001). Studies of institutional interactions have examined how global institutions and different international agreements on biodiversity and interventions such as the EU sponsored FLEGT initiative interact with REDD+ (Visseren-Hamakers, Arts, and Glasbergen 2011, Tegegne et al. 2014, Bastos Lima et al. 2017). Multisectoral REDD+ analyses have primarily focused on national level of policy and on REDD+ coordination with sectors such as agriculture, water or broader development aims (Kengoum and Tiani 2013, Tegegne et al. 2014, Atela et al. 2016, Korhonen-Kurki et al. 2016). However, ground-level institutional interactions remain underexplored (Jacob and Brockington 2017, Awung and Marchant 2020). We address these gaps by investigating how operational-level interactions between forest institutions and REDD+ affect REDD+ projects' outcomes in Cameroon.

Specifically, we (i) investigate the implementation typology of three REDD+ projects; (ii) identify the key determinants of these projects' outcomes, and (iii) explore how the interactions between forest institutions and REDD+ shaped REDD+ projects' outcomes in South and West Cameroon.

Next, we outline the theoretical framework for policy implementation and institutional interplay that informs our work, and outline the research on REDD+ implementation to date. We then reason out our case study selection and outline our qualitative material collection solutions and the methods used to analyse the material. We subsequently report our findings and discuss them in light of relevant literature.

2 REDD+ evidence through a policy implementation and institutional interplay lens

2.1 Policy implementation framework

2.1.1 Background

Policy is understood as the programmatic activities formulated in response to an authoritative decision (Matland 1995). In the case of REDD+, it includes the national and subnational REDD+ strategies, programs, plans and projects set up to implement global REDD+ rules. Policy implementation refers to the process in which actions are directed toward putting policies into effect (Goggin et al. 1990). It has traditionally been studied through a top-down and a bottom-up perspective (Van Gossum et al. 2010, Jensen, Johansson, and Löfström 2018). Under the top-down approach, implementation starts with the authoritative policy decision at the central or top government level and proceeds downwards through the hierarchical administrative structure (Sabatier 1986). The top-down perspective considers clear policy goals, limited actor involvement and small policy changes as ingredients for successful implementation (Van Meter and Van Horn 1975, Sabatier and Mazmanian 1979). Yet the passage of legislation often requires ambiguous language, and the focus on central policy decision makers ignores that implementation takes place locally (Matland 1995). The bottom-up approach emphasizes the role of local actors and context: policy success relies on the autonomy and skills of local policy implementers to adapt policies to local conditions (Lipsky 1978, Berman 1980); but overemphasising local autonomy risks disregarding the level of policy control of elected representatives (Sabatier 1986).

Combinations of both perspectives have been attempted (Parsons 1995). Matland (1995) proposed a framework that aims to explain the circumstances in which either approach is the most appropriate. Based on top-down researchers' tendency to study relatively clear policies and bottom-up scholars' inclination for policies with greater uncertainty, Matland's framework categorizes implementation according to two main variables: policy conflict and policy ambiguity.

2.1.2 Matland's ambiguity–conflict framework for policy implementation

Matland (1995) framework indicates four distinct types of policy implementation based on interactions between varying levels of policy conflict and ambiguity, and present the main determinants of implementation outcomes for each type (figure 1). Policy conflict occurs when stakeholders hold incongruous views on policy goals, means or activities (Matland 1995). Policy ambiguity is understood as the degree of clarity of policy goals or means.

In administrative implementation, policy ambiguity and conflict are low and resources such as staffing or technology determine the outcomes. In political implementation, ambiguity is low, but there is high level of conflict. Outcomes are decided by power, when one actor or a coalition of actors have sufficient power to force their will on others. When power is more balanced, actors will bargain to reach an agreement, which might require remuneration to change incentives. High ambiguity and low conflict result in experimental implementation: the context drives implementation; local actors and their resources determine the outcomes, resulting in a broad variation across sites. Policy learning from different outcomes is crucial for overall success. Finally, symbolic implementation involves high conflict and high policy ambiguity and might result in serious implementation deficit. Like political implementation, solutions involve coercion or bargaining, but outcomes are determined by competing factions at the local level and who control available resources. Contextual features thus remain relevant for outcomes.

		Policy Conflict	
		Low	High
Policy ambiguity	Low	Administrative implementation	Political implementation
	High	Experimental implementation	Symbolic implementation

Figure 1. Ambiguity–conflict framework for policy implementation (Matland 1995)

Van Gossum et al. (2008) applied Matland’s framework to the Flanders’ forest expansion project and reported low policy ambiguity and high policy conflict linked to local resistance by farmers, exemplifying political implementation. Their study submits that power balance between farmers’ organizations and policy legislators would determine the outcomes of the forest expansion initiative.

2.1.3 Evidence on REDD+ outcomes through a policy implementation lens

Studies on REDD+ implementation have aligned most closely with the bottom-up approach to policy implementation, identifying tenure insecurity and benefit-sharing problems as major barriers to REDD+ implementation as discussed next.

The Rufiji Delta forest carbon project in Tanzania indicates how statutory rules allocating land rights to the State conflict with local customary rules of the Warufiji that settled in the area two millennia ago (Beymer-Farris and Bassett 2012). In Mount Cameroon, overlapping land ownership rules raised local concerns about how carbon benefits are to be shared, creating distrust toward the project (Awono et al. 2014). The imposition of statutory tenure systems over customary rights can also pave the way for land grabbing and impede community participation in projects (Lasco et al. 2013, Chomba et al. 2016). In the Kasigau corridor REDD+ project in Kenya, conflict emerged as elites appropriated extensive tracts of land for ranching, while most people remained landless or with land holdings too small for economic viability (Chomba et al. (2016). In all these instances, incompatibilities between statutory and customary land tenure fuelled conflicts in REDD+ project implementation.

How tenure conflicts should be handled has diverged between top-down and bottom-up views. Matland (1995) suggests that the top-down school of thoughts treats conflicts as an endogenous factor that policy designers can influence and should minimize, while the bottom-up perspective takes policy conflict as a given that cannot be manipulated, particularly when it is based on incompatibility of values (Berman 1980). In REDD+ studies, Lasco et al. (2013) and Sunderlin et al. (2014) claim that reconciling statutory with local tenure rules is imperative for forest protection and project sustainability. Yet, Resosudarmo et al. (2014) indicate in a study on Indonesia that clarity and security of tenure are not necessary for REDD+ effectiveness. They found that reforestation programs were feasible despite unclear tenure and that synergies between the lack of land tenure security and the customary practice of planting trees to secure land tenure could be used to incentivize tree planting. Their suggestion illustrates the bargaining mechanism that can at times overcome barriers posed by a

high level of conflict, through negotiations to reach agreement on actions as opposed to agreeing on common views or values (Matland 1995). Policy conflict hinders participation; it is thus unsurprising that limited involvement has been reported in various REDD+ initiatives. In Cameroon, local communities, indigenous people, small forest enterprises, and people from specific ecological zones such as the savanna, are often poorly involved in REDD+ processes (Tegegne et al. 2017, Satyal 2018).

Policy ambiguity is also widespread in REDD+ implementation. In Papua New Guinea, lack of common understanding of REDD+ prevented communities from taking advantage of project outcomes and concentrated benefits among elites (Leggett and Lovell 2012). Cerbu et al. (2013), Chia et al. (2013), and Lasco et al. (2013) raise the need to reinforce the technical, managerial, and risk management capacities of local communities. However, while capacity building is a determinant factor for project outcomes when ambiguity prevails (Matland 1995), it would lack effectiveness in instances of high policy conflict. This emphasizes how assessing the policy implementation typology can help aim intervention measures at the most influential variables of implementation outcomes, and exposes the limitations of most studies that have followed a unidimensional approach to REDD+ implementation analysis, following either a top-down or a bottom-up approach. In this study, we adopt Matland's policy implementation framework that combines the two and facilitates systematic comparisons of case studies and the prioritization of the most appropriate solutions for specific contexts.

Conflicts on the distribution of revenue from forests products can lead to lack of trust in the fairness of REDD+ and impair local participation (Jacob and Brockington 2017, Awung and Marchant 2020); but to accurately capture how established forestry institutions impact on climate change mitigation projects, Matland (1995) framework needs to be expanded to consider the multi-institutional context that is relevant to climate change. An institutional interaction perspective can help us better understand how long-established forest institutions around control of forestlands and distribution of forest revenues affect REDD+ outcomes.

2.2 Institutional interaction framework

Research on institutional interaction is closely linked to the study of the effectiveness of international institutions (Gehring and Oberthür 2009). It emerged to the global change research agenda when scholars drew attention to an increasing regime density (Young 1996) and the risk of treaty congestion in the international system (Weiss 1993). It is now widely recognized that the effectiveness of specific institutions often depends not only on their own features, but on their interactions with other institutions (Young et al. 1999). Institutions governing natural resources are sets of rights, rules, and decision making procedures that mediate access to and control over natural resources by determining what is permitted, forbidden or acceptable, as well as the procedures for using them in specific contexts (Ostrom 1990, Paavola 2007, Young 2008). Because of the cross-sectoral nature of environmental issues and the proliferation of environmental agreements in the 20th century, many environmental areas are co-governed by multiple institutions (Gehring and Oberthür 2008). Forest protection, for example, is addressed by biodiversity as well as by climate change and forestry institutions. Institutional interaction (or interplay) occurs when one such institution exerts influence and affects another (Young 2002, Oberthür and Gehring 2011).

Institutional interaction involves a source institution or its component from which influence originates, and a target institution or its component, which is affected by the former. Institutional interactions are synergistic when they improve the target institution's ability to reach its objectives and disruptive when one institution hinders the effectiveness of another (Gehring and Oberthür 2009). Interactions can occur at output, outcome and impact levels through four mechanisms (Gehring and Oberthür 2008) (figure 2):

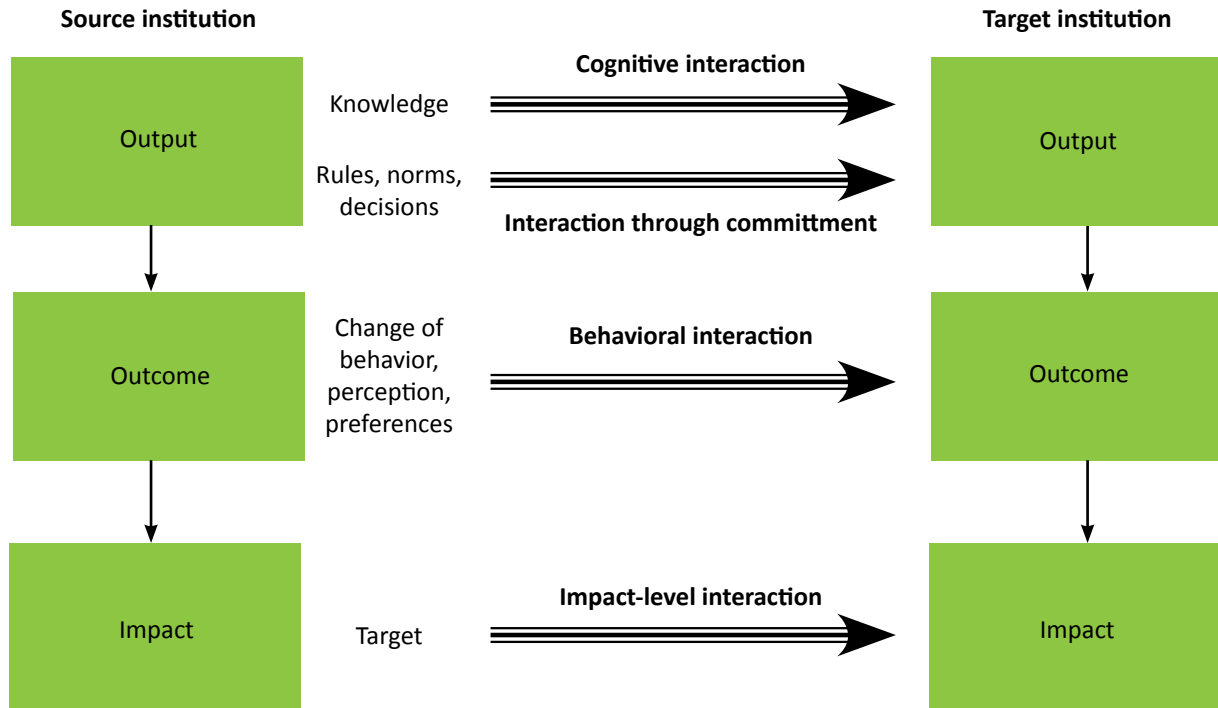


Figure 2. Causal mechanism for institutional interaction (Gehring and Oberthür 2009)

First, cognitive interactions happen at the output level, when ideas or information from the source institution filter into another one by modifying the decision making of actors operating within the target institution and influence its outputs. Instances where strategies to avert ozone layer depleting substances informed greenhouse gas mitigation approaches are an example (Gehring and Oberthür 2009). Evidence from a study on horizontal institutional interactions between REDD+ and the Forest Law Enforcement, Governance and Trade (FLEGT) agreement in Cameroon and the Republic of Congo showed a positive cognitive interaction as consultations throughout the FLEGT process served as a model for multi-stakeholder engagement in REDD+ processes (Tegegne et al. 2014). Similar positive cognitive synergies between the Sustainable Development Goals (SDGs) 13, which calls for climate action, and SDG 15, which promotes the sustainable use of terrestrial ecosystems, and REDD+ were identified in Indonesia and Myanmar (Bastos Lima et al. (2017).

Second, normative interplay takes place at the output level when legal commitments to the source institution affect the decision making and outputs in the target institution. An example is the influence that statutory resource tenure rules have on REDD+ benefit sharing rules (Awono et al. 2014). Third, behavioral interactions occur at the outcome level in three steps. Initially, the source institution produces an output such as a set of prescriptions or proscriptions. Relevant actors then adapt their behavior in response, which may include unforeseen side effects and deviating behavior. Eventually, the behavioral changes exert influence on the effectiveness of the target institution. For example, incentives to increase carbon sequestration under global climate change agreements can lead stakeholders to establish fast-growing tree plantations which lead to loss of biodiversity and undermine the outcomes of biodiversity institutions (Jacquemont and Caparrós 2002). Fourth, impact-level interplay exists when the impact of an institution on its target affects the target of another institution (Gehring and Oberthür 2009). An example is an effective REDD+ scheme that increases carbon storage and enhances biodiversity conservation (Gardner et al. 2012).

While many studies examine output-level interplay, such as interactions at the policy level (Tegegne et al. 2014, Bastos Lima et al. 2017), outcome and impact-level institutional interactions have seldom been examined (Jacquemont and Caparrós 2002). We seek to address this gap by investigating outcome-level or behavioral interplay between the forest institutions as the source institution, and REDD+, the target institution.

Specifically, we combine the two theoretical frameworks to analyze REDD+ project outcomes in Cameroon as follows: First, we use Matland (1995) conflict-ambiguity typology to classify policy implementation features of three REDD+ projects in Cameroon. We then apply Gehring and Oberthür (2009)'s theory of institutional interaction to explain how the outcomes of forestry institutions have affected the behavior of local REDD+ actors that led to certain effects on REDD+ projects. In the discussion, we further explore how our evidence enriches Matland's framework.

3 Methods

3.1 Study areas

Cameroon offers a rich setting for examining REDD+ project outcomes. With over 22 million hectares of forests (MINFOF 2012), the country is a key player in international climate change negotiations. The forest sector is ruled by the Ministry of Forestry and Wildlife (MINFOF) and the 1994 forest law that establishes a permanent and a non-permanent forest domain. The permanent forest domain includes land permanently allocated to forests and/or wildlife habitats such as production forests, forest reserves, and wildlife conservation sites. Production forests are subdivided into Forest Management Units (FMUs); exploitation licenses are publicly auctioned and selected logging operators compelled to create local timber processing factories. Forest reserves include protection sites such as botanical gardens and reforestation areas. Community forests are part of the non-permanent forest estate and were introduced in line with the decentralization process in forest governance, to transfer powers and means to local entities and improve local communities involvement in forest management. In this study, rules regarding community forestry, local timber processing and reforestation areas are the focus of outcome-level interplay analysis.

In Cameroon, the REDD+ process is overseen by the National REDD+ Steering Committee embedded within the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED). REDD+ pilot projects are implemented with support from NGOs within local communities. Project beneficiaries are local community members and those involved in project activities are also considered local implementers in the analysis. Three of these projects were chosen for implementation typology analyses.

3.2 Pilot projects selection

Case studies were chosen following a purposive sampling approach, a deliberate selection of specific settings because of the crucial information they can provide, and which cannot be obtained so well in other ways (Carpenter and Suto 2008). In this study, three REDD+ pilot cases were selected to cover distinct ecological zones and stages on the forest transition curve (Angelsen 2007) where the effects of selected forest regulations are assessable, and a range of REDD+ activities and sociocultural settings to account for their influence on REDD+ implementation typology and institutional interactions (Table 1). The first project focused on sustainable forest management in fairly undisturbed forests. The second hosted an avoided deforestation project in an agricultural and forest mosaic landscape. The third project was a reforestation initiative in an area of tree plantations (figure 3). The first two projects were implemented in Nkolonyeng and Efoulan in the dense tropical rainforest of South Cameroon, and the third in Bana-Bapouh, within the western savanna area.

3.2.1 Case study 1: Nkolonyeng

Nkolonyeng, in Dja and Lobo Division in southern Cameroon hosted the CED-led PES scheme project. It is located in an evergreen moist tropical forest area and has 500 inhabitants of mostly Fang ethnic group and a minority of Baka Pygmies (Letouzey 1968, CED 2012). Households practice shifting agriculture for subsistence but also grow cash crops like cocoa. However, income from cocoa is insufficient for the community to raise above the poverty level. Nkolonyeng is inaccessible by road during the rainy season, which limits access to markets. NTFPs such as fruits, tree bark, leaves, caterpillars, and bushmeat for subsistence and sale are important. A substantial part of the forest is covered by logging concessions. The area also hosts a protected area and a 1,042 ha community forest established in 2005.

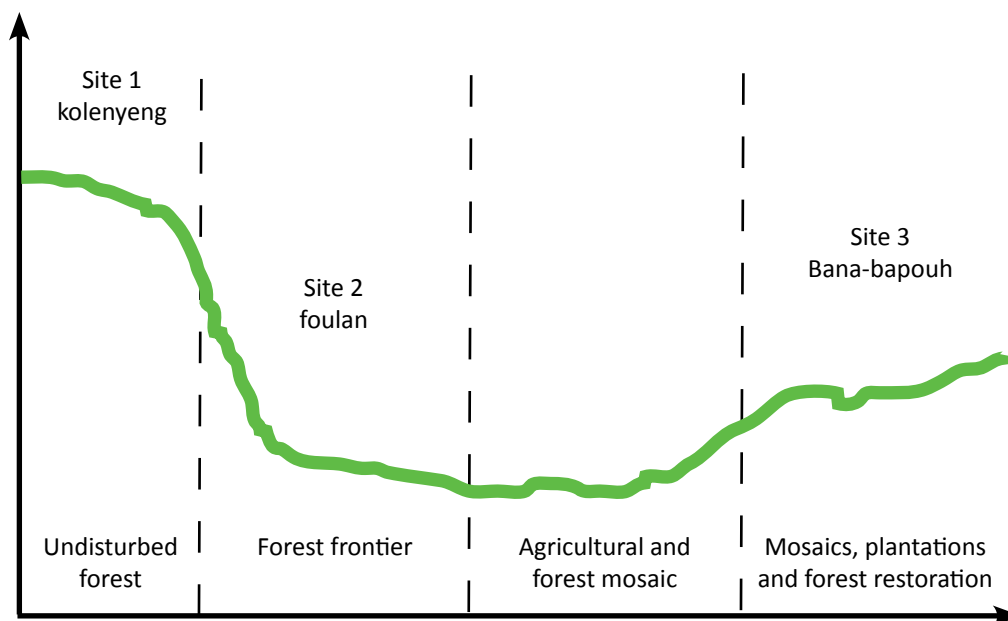


Figure 3. Position of the study sites on the forest transition curve (Adapted from Angelsen, 2007)

The Nkolenyeng community created a legal association for community forest management, the Association of Sons and Daughters of Nkolenyeng (AFHAN). It developed a management plan for the community forest with the help of the Center for Environment and Development (CED), a national NGO. CED offered to implement a PES scheme to support forest management and AFHAN agreed. The Plan Vivo PES pilot project was launched in 2009. The pilot was one of the start-up projects selected by the UK Department for International Development (DFID) for funding ahead of the first round of initiatives funded by the Congo Basin Forest Fund (CBFF). It ran from 2009 to 2015 with the goal of slowing forest cover loss and enhancing carbon stocks in the Nkolenyeng community forest (CED 2012).

The project set up tree nurseries for fruit trees such as African plum, avocado, lime, orange and tangerine. About 10,000 improved cocoa seedlings were provided to increase farm productivity and reduce farmland expansion to the forest. Indicators of forest preservation including the location and extent of deforestation and degraded forest were developed and monitoring was done together with the beneficiaries. The monitoring group patrolled regularly to identify the location of new fields and count the number of trees felled in the community forest. The Site Coordinator compiled GPS observations and photo data for submission to CED on a quarterly basis for forwarding annual reports to the Plan Vivo Foundation to obtain carbon funds (CED 2012). Revenue from the sale of carbon credits was shared between community activity groups and social benefit groups. Community activity groups focused on sustainable agriculture, cocoa agroforestry, forest patrolling, Non-Timber Forest Products (NTFP), plantain, livestock, and beekeeping activity groups. Social benefit groups included Baka and the elderly group. Community groups could submit annual funding proposals to the AFHAN. The initiative has funded community infrastructure projects such as rural electrification and water supply.

3.2.2 Case study 2: Efoulan

Efoulan, also in Dja and Lobo Division in southern Cameroon, lies in an evergreen moist tropical forest area with a population density of 30.81 inhabitants per km² (UCCC 2014). The local people are of Fang ethnicity with a minority of Bagyeli and Baka Pygmies. Households rely on subsistence shifting agriculture for livelihoods. Common food crops include plantain, groundnuts, cassava and maize. Perennial cash crops such as cocoa are the main source of income. Non-Timber Forest Products

(NTFP) are also important in Efoulan. Some people are hunters, and a few are involved in subsistence livestock rearing and fishing. Forest exploitation is a prominent activity in Efoulan. The area hosts industrial logging concessions, council and community forests.

Customary land tenure by usufruct and ancestral rights prevails in the Dja and Lobo division, including Efoulan (Diaw 1997). Usufruct rights belong to the first person who clears a forest plot. Ancestral or inheritance rights allow patrilineal transmission of ownership from the first occupants to their descendants. Customary tenure grants ownership of a virgin forest to the family, the clan or the lineage that owns the land, and restricts tree rights to family members (Diaw 1997). Trees belong to the owner of the land they grow on. People external to the community can access land by negotiating with owners. Share-cropping agreements can only cover annual crops, perennial crops cannot be planted. After harvest, land is returned to the owner. The sale of inherited land to strangers is uncommon. Traditional leaders are the guarantors of customary rights. They are assisted by a council of dignitaries, representing a family or a clan in the village. Conflicts such as crop damage or property encroachment are brought to the traditional chief, who convenes dignitaries to settle claims.

Efoulan hosted an IUCN pro-poor REDD+ pilot project from 2013 to 2017 in the Fang and Baka community. Funded by the Danish International Development Agency (DANIDA) through the Congo Basin Forest Fund (CBFF), the project covered the Tri-national Dja-Odzala-Minkebe (TRIDOM) area between Cameroon, the Republic of Congo and Gabon (IUCN 2017). A total of 30 community members were trained in tree domestication and nursery building. They learned how to build seed beds, shade houses, and how to maintain a tree nursery. They were also taught regeneration techniques such as seedling, stem cutting, layering and grafting of fruit tree species such as avocado, oranges, lemon, moabi (*Baillonella toxisperma*) and njansang (*Ricinodendron heudeloti*). Community members were also trained in improved agricultural practices, e.g. how to identify cultivation sites, prepare the land without burning and how to choose seeds. They were also taught agricultural staking, sowing in line, maintaining spacing between crops, fertilization and weeding a farm. Agricultural supplies such as hoes, machetes, pickaxes, plants, improved seeds of palm oil, cocoa, peanuts, maize, mineral fertilizer and pesticides were provided to 20 smallholder farmers to enhance agricultural productivity and avoid shifting cultivation (IUCN 2017). Beneficiaries were monitored monthly, but the project ended before crop production could be assessed.

3.2.3 Bana-Bapouh

The third project was implemented in Bana-Bapouh forest reserve, a humid forest-savanna mosaic in West Cameroon (Letouzey 1968). The reserve is located at the intersection of Bana, Bangou, and Bangangte subdivisions within the Haut-Nkam and Nde Divisions in West Cameroon. Bana-Bapouh is mostly covered in grasslands with elevations of up to 2,088 m and a population density of 112 inhabitants per km². Locals are mostly of the Bamileke ethnic group involved in small-scale agriculture. Common crops include Irish potato, tomato, maize, and beans. Slash and burn farming is uncommon in the grassland area. Tillage is easier but cash crops less common since the fall of cocoa and coffee cooperatives from the slump in world market prices in the 90s (Jiotsa, Okia, and Yambene 2015). Customary tenure is preserved by traditional leaders.

Traditional chieftainships have been in place in West Cameroon for a long time and they have more authority than those in the South. Traditional chiefs are descendants of ancestral leaders and they govern with the support of a council of dignitaries. The chief is the owner of all land, which was conquered by virtue of clans' wars. Plots of land are allocated to mature males to meet the subsistence needs of their families. They are usually demarcated by hedgerows. Household heads can grant farming rights to their wives and inheritance rights to male heirs. A minority of nomadic Bororo is also present in the area, attracted by the hilly landscape and relatively low temperature. The pastoral Bororo communities are settled on the ridges of mountains. Poultry and pig rearing are practiced by the Bamileke community. Other livelihood activities include timber milling, aquaculture, hunting and the collection of NTFPs such as palm wine and aiélé (*Canarium schweinfurthii*), locally known as dark fruits.

Table 1. Case studies description

Characteristics		Site 1: Nkolenyeng, South region	Site 2: Efoulan, South region	Site 3: Bana-Bapouh, West region
Ecological zone		Evergreen moist tropical forest area	Dense humid tropical forest	Savanna-forest mosaic
Stage of the forest transition curve		Fairly undisturbed forest	Forest frontier: Agricultural and forest mosaic	Agricultural and restored forest mosaic
Some major forest activities		Community forests exploitation	Industrial timber logging	Tree plantation
Forest regulation targeted (Output)		Community forestry	Timber processing	Reforestation areas
Sociocultural traits	Ethnic groups	Fang, minority of Baka Pygmies	Fang, minority of Bagyeli Pygmies	Bamileke, minority of Bororo
	Main livelihoods	Agriculture, NTFP gathering, hunting	Agriculture, hunting, livestock rearing	Agriculture, Cattle rearing, poultry and pig farming
	Land tenure	Usufruct and ancestral rights	Usufruct and ancestral rights	Inheritance and farming rights
REDD+ Project and main activities		CED-led PES scheme: Sustainable community forest management, improved farming, tree regeneration	IUCN-led Pro-poor REDD+ project: Avoided deforestation through improved agricultural practices, tree regeneration	PNDP-led REDD+ project: Tree restoration in a council forest reserve, improved agriculture, forage cultivation

The Bana-Bapouh forest reserve was created in 1947 over 4,800 ha of land, planted with eucalyptus to stabilize the steep slopes and prevent landslips. Originally overseen by the forestry administration, the management of the reserve was transferred to the local council in 2012 as part of the decentralization process. Pastoralists are practicing burning to induce grass growth for cattle and the forest is also under pressure by unauthorized logging, overgrazing, farming and expanding settlements. A REDD+ pilot project was initiated in 2015 to protect the forest. The project was funded by the French Agency for international Development (AFD) and coordinated by the National Participatory Development Program (PNDP) that assists local councils in the decentralization process (PNDP 2018). The pilot involved restoration of parts of the eucalyptus reserve. Locals were trained in tree nursery preparation and fruit tree species such as avocado and mango were planted on local farms. Farmers were provided with improved seeds to increase the productivity of crops such as tomato and Irish potato. Livestock keepers were also taught how to cultivate grass for cattle. However, the project waned in 2018 when the planted trees were still young and vulnerable.

3.3 Data collection and analysis

3.3.1 Methodology

We used a case study approach, combining document review and qualitative methods to collect materials. Qualitative methods are used to give voice to people to tell their own personal experiences, opinions and ideas (Munhall 2008). They are particularly useful when there is a need to understand how individuals and communities make sense of their experience (Liamputtong 2013). They are thus

appropriate for this study, which seeks to understand local actors' experiences of REDD+ projects to assess the nature and level of conflict and ambiguity in order to determine their implementation typology on the one hand, and to assess behavioral responses to selected forest regulations and their implications for REDD+ project outcomes, on the other.

3.3.2 Research design

Qualitative research is carried out in participants' homes or places of work, to understand the context that plays a crucial role in their lives (Creswell 2012). Fieldwork was conducted in Efoulan, Nkolenyeng and Bana-Bapouh from December 2018 to March 2019 to collect the material. Access to participants was obtained through a gatekeeper and referral (snowballing) sampling methods. Local REDD+ project leads introduced the lead researcher to selected participants, who in turn invited their peers. Four focus group discussions were organized on REDD+ implementation. They involved people from similar backgrounds and were facilitated by the lead researcher (Tonkiss 2012). One focus group was conducted with 12 Fang beneficiaries of the IUCN Pro-poor REDD+ project in Efoulan; a second one with 10 Fang beneficiaries of the PES project in Nkolenyeng and members of the Nkolenyeng community forests; a third one with 7 Bamileke participants in the REDD+ project in Bana-Bapouh, and; a fourth one with 8 Bororos participants in the REDD+ project in Bana-Bapouh (Table 2). The focus groups were organized in community halls and they aimed at allowing the participants or project implementers to discuss their experiences together.

Table 2. Research design

Research aims	Assessment	Data sources	Field data collection		
			Site 1: Nkolenyeng	Site 2: Efoulan	Site 3: Bana-Bapouh
Typology of REDD+ projects implementation: <ul style="list-style-type: none"> • Conflict intensity • Ambiguity level 	<ul style="list-style-type: none"> • Alignment or incongruities between implementers' views and projects' statements of goals, means or activities • Clarity level of projects' goals and means to implementers 	<ul style="list-style-type: none"> • National REDD+ strategy • REDD+ projects' documents • REDD+ projects' beneficiaries • Local authorities and key informants 	<ul style="list-style-type: none"> • 1 focus group session with 10 participants 	<ul style="list-style-type: none"> • 1 focus group session with 12 participants 	<ul style="list-style-type: none"> • 1 focus group session with 7 farmers • 1 focus group session with 8 pastoralists • 6 in-depth interviews with: <ul style="list-style-type: none"> – 1 traditional leader – 2 forestry officers – 2 council officers – 1 husbandry officer
Behavioral interactions between forest rules and REDD+ projects: <ul style="list-style-type: none"> • Outcomes of forest rules • Effects on REDD+ outcomes 	<ul style="list-style-type: none"> • Ways in which relevant forest regulations have changed local actors' behavior • How resulting behavioral changes have affected REDD+ project outcomes 	<ul style="list-style-type: none"> • Relevant forestry regulations • REDD+ projects' documents • REDD+ project beneficiaries • Local authorities and key informants 	7 in-depth interviews with: <ul style="list-style-type: none"> – 2 traditional leaders (1 per site) – 1 forestry officer, – 1 agricultural officer, – 1 council officers – 1 private forest logging company – 1 local NGO (From Djoum subdivision that comprises Efoulan and Nkolenyeng villages) 		

Policy conflict occurs when there are incongruous views on policy goals, means or activities (Matland 1995). To assess conflict intensity in REDD+ projects implementation, beneficiaries were queried on their thoughts about climate change, linkages between local livelihood, deforestation and climate change, and their view of REDD+. Questions on REDD+ pilot projects followed, inviting their commentaries on projects' objectives, the activities they undertook, the benefits they obtained, and areas for improvement. Their accounts permitted the assessment of ambiguity levels.

For behavioral interplay assessment, participants were asked to discuss how selected forest regulations affect their livelihoods and how related behavioral change influenced REDD+ projects. In the forested study sites, emphasis was on community forest rules, particularly with the beneficiaries of Nkolenyeng community forest. In Efoulan, closer to local timber factories, participants shared their thoughts on timber processing rules. In the savanna area, Bana-Bapouh residents discussed how they have been affected by rules on reforestation areas.

3.3.3 Rigour and ethical considerations

During the fieldwork, informal discussions were held with community members to develop a trusting relationship with participants. The validity of the findings was strengthened through triangulation. Triangulation is based on the convergence of information from multiple sources to corroborate the data (Carpenter and Suto 2008). Two kinds of triangulation were applied to this study: data source and methodological triangulation. The earlier refers to the use of multiple data sources to develop a comprehensive understanding of phenomena (Patton 1999). In addition to focus groups, in-depth interviews (Byrne 2012) were conducted with one traditional leader in each of the three villages, with five REDD+ stakeholders including forestry, agricultural and council officers, a private forest company and a local NGO in Djoum subdivision that oversees Efoulan and Nkolenyeng villages, and with five local stakeholders from Bana-Bapouh including two forestry officers, two council officers, and a husbandry officer. These interviews were carried out in the participants' offices and in traditional leaders' homes. The interviews covered the participants' role in the village, their main activities, and their views on climate change and REDD+ projects' and regulations' effects on livelihoods.

Before all discussions, participants were informed about the purpose of the research to allow them to make a voluntary decision to participate. Verbal informed consent was obtained as it was more appropriate for the setting. To protect the confidentiality of research participants, their names were not recorded. To preserve the authenticity of participants' thoughts and words, interviews were conducted in French, the language used in West and South of Cameroon, and recorded with interviewees' consent. Transcription was done by native Cameroonians familiar with the local accent. Transcribers were briefed on expectations and confidentiality requirements, and their signed data protection forms secured. The group discussions and interviews were transcribed in verbatim and the transcripts were then coded using the NVivo program (QSR 12) in two steps, first by skimming through the transcripts to identify broad categories and then more detailed sub-categories. Narrative analysis (Gill and Goodson 2011) was used to code text, participants' views and understanding of REDD+ projects' goals and activities, and evidence on the determinants of implementation and interplay between different institutions.

4 Implementation typology of REDD+ pilots

4.1 Policy Conflict in project goals and activities

A key goal of Cameroon's REDD+ strategy and pilot projects is to eliminate smallholders' shifting agriculture, which is considered a major driver of deforestation (MINEPDED 2018). In all three case studies, project activities involved agricultural intensification techniques based on enhanced crop varieties and mineral fertilizers to decrease the need for burning and expanding farms (CED 2012, IUCN 2017, PNDP 2018). The level of agreement of local project implementers with REDD+ projects' goals and activities differed across sites. In the dense forest site of case study 1, the project goals and activities were highly contested. In the forest-agriculture transition area of case study 2, there was conflict over some project activities, and in the savanna region of case study 3, project goals and activities were much less contested. In case study 1, beneficiaries claimed that large scale agriculture and industrial logging clear larger forest areas:

“The maximum farm size I can cultivate is 1.5 - 2 hectares, but when the big elites arrive in the village with their big means they do 25 hectares, 30 hectares at once, you see massive deforestation [...] You cannot even ask them not to, otherwise they will say that you are expelling people from the village, that you are doing witchcraft, that you are hindering development.” (Beneficiary)

This view was also corroborated by local officials:

“It is rare to see peasants farming beyond four kilometers into the forest, perhaps except for the fact that logging companies now go further in the forest and create roads, and a farmer who sees an area that has already been cleared finds it easier to cultivate, given their limited means”. (Agricultural officer)

Disagreement about promoted farming techniques was also notable. Farmers suggested that burning eases clearing, eliminates shadowing of crops and fertilizes the land, and that yields are higher in newly converted forestland, as explained by two beneficiaries from case study 1:

“We are obliged to burn; we really do not know how we can stop burning, because we cannot work under trees and achieve good yields”. (Beneficiary)

“They taught us some farming methods, but when we put them into practice they did not work. Take plantain, for example, they showed us ways to grow them in fallow lands and we did so but they failed, because plantain crops grow best in virgin forests [...]. When the new cocoa plants arrived everyone said it was bad cocoa, [...] this variety has so many problems”. (Beneficiary)

In case study 2, the participants were more ambivalent about the project goal and drivers of deforestation, one of which acknowledged the following:

“We are not scientists; if the scientists said we are the agents of deforestation, then it might be the case”.

The beneficiaries also welcomed some REDD+ project activities such as the provision of farm inputs and tree planting, although they acknowledged difficulties as well:

“It was our first experiment, and [...] if it is adequately monitored and if funding is put directly at the disposal of our organization, there would be a positive impact [...]. Cultivating without burning has been laborious; there are so many tree roots and stumps in farms”. (beneficiary and member of farming cooperative)

And while participants adopted local tree species such as Moabi, they abandoned citrus plants in tree nurseries:

“Citrus need to be weeded every 2 weeks; if you take a look at the nursery outside you will see their leaves dying; they need frequent maintenance and treatment, which is laborious and costly”. (Beneficiary)

In the less forested West region, participants from case study 3 agreed with the project goal recognising that smallholders' livelihoods put a strain on the forest reserve:

“There used to be trees everywhere here back in the days, but the population is growing and we are running out of space. People clear the woods for new lodgings and use timber for housebuilding. With rampant poverty, residents also use wood for energy. Then there is the issue of bush fire that occurs frequently. We cohabit with pastoralists and when they start the fire to stimulate the growth of grass sprouts for cattle, it expands widely into the forest reserve”. (Beneficiary).

While they found tree nursery activities quite complicated, agricultural activities resounded positively with both smallholder farmers and pastoralists:

“We were taught how to select good quality seeds; in the past, we sourced seeds from harvested crops and would use them repeatedly, which was not good; now we can produce our own good seeds. We were also taught how to apply phytosanitary treatments and mineral fertilizer.” (Smallholder)

“The project recommended against bush fires and taught us how to grow grass for cattle. We had never known grass could be cultivated to feed cows, we have now learned how to grow them.” (Pastoralist)

4.2 Ambiguity in project goals and activities

Policy ambiguity manifested an opposite pattern to policy conflict. It was low in case studies 1 and 2, although in the latter case beneficiaries missed certain aspects of the projects' aim. In case study 3, beneficiaries were not completely clear on the project's approach. The clarity of both goals and activities in case study 1 is evident in these beneficiaries' statements:

“We were introduced to the PES initiative because we had been granted a community forest to generate revenues from logging; but in place of benefits, logging brought about conflicts among community members. Thus, the PES initiative was suggested as an alternative way of making profit, but by conserving the forest.” (Beneficiary)

“The forest was divided into plots and each plot had a known surface area and a management type. There were fallows, secondary forest, and conservation areas where clearing was prohibited. Verifiers were sent to the field to check; they approved full payment when prescriptions were adhered to, or less if not. The money was sent to us through project developers, then distributed across activity groups; there were the cocoa group, cassava group, plantain group, corn group, forest products group. The money allowed groups to carry out their activities. There was also the elderly group that ran a small trading business and benefits were shared among group members; that’s how it worked”. (Beneficiary)

Similarly, in case study 2 the beneficiaries were clear about the goals and activities, although they highlighted issues to do with monitoring:

“REDD+ project aimed to draw our attention to deforestation and forest degradation and associated dangers if corrective measures were not taken.” (Participant)

“The project trained at least 20 people in tree regeneration. We were showed how to create tree nurseries and perform tree grafting and budding”. (participant)

“The issue is their visits were seldom. After the training, they left and there was no close monitoring. We pushed for local coordination, offering to host a local bureau if means were put at our disposal, but it was dismissed”. (participant)

In case study 3, project goals were rather clear to most beneficiaries, as indicated below:

“In the old days, there were many trees and the weather was cooler and favorable for tourism; you can still see tourist camps in the area. When you climbed up here around this time [midday], it would be so foggy you would think the day is still dawning. Now that trees are gone, the weather is becoming drier. This is why REDD+ is trying to restore the trees to reinstate what has been lost”. (Beneficiary)

But a focus group exchange among three farmers suggests ambiguity about the goals of projects’ subsistence, income generation and learning activities:

“We were taught how to ameliorate farming and cattle rearing, but I think there was a failure in the way the first harvests were handled. They should not have been shared, we should have operated like common initiative groups by reinjecting all the benefits back into the activities to upscale the project”. (Beneficiary)

“And what would we eat? We only live out of farming...[Having no alternative income sources]” (Beneficiary)

“These were only trials; these were pilot farms to demonstrate the teachings rather than a common initiative group... “(Beneficiary)

Pastoralists were also perplexed about the means needed to put the training into practice:

“We did learn how to grow grass for cattle, but where is the space to grow it? I cannot see any, and eucalyptus trees in this area absorb so much water...” (Beneficiary)

To summarize, case studies 1 and 2 are instances of political implementation, where outcomes are likely determined by the balance of power between central policy designers and local implementers through coercion, remuneration or bargaining. Case study 3 is an instance of experimental implementation, where outcomes will depend more on local context, including the resources and skills of local implementers (figure 4).

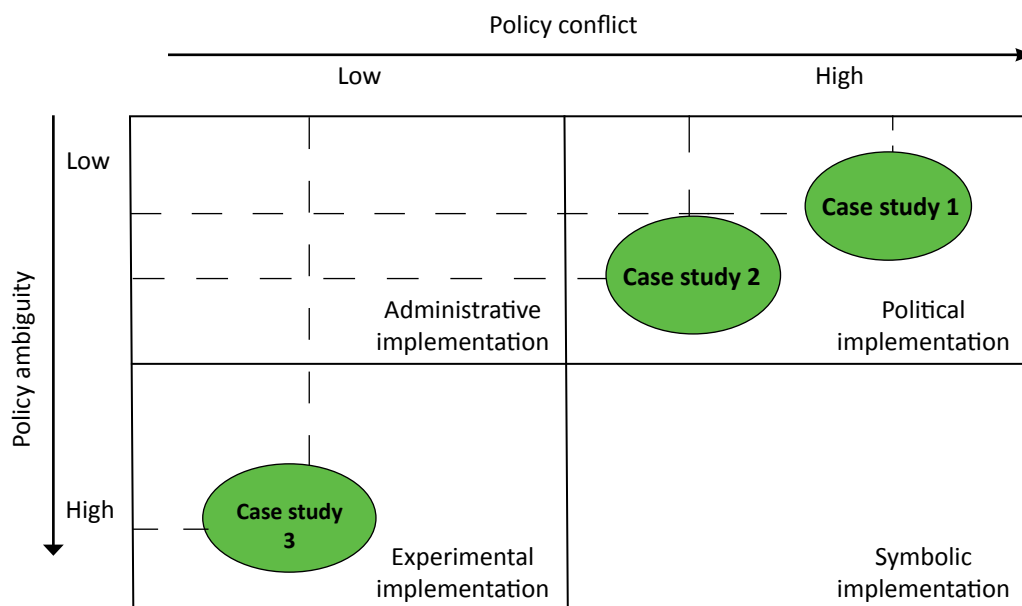


Figure 4. Typology of REDD+ implementation across three case studies

Challenges to REDD+ activities emerged in all three cases. In case study 1, beneficiaries showed interest in forest activities, but reverted to unsustainable practices soon after the end of the project. In case study 2, participants traded away introduced tree seedlings, while in case study 3, implementers struggled with forest restoration activities. Next, we examine how the limited performance of these forest-related REDD+ activities is linked to the interactions with pre-existing forest institutions and how these institutions can be either inhibitive or supportive of REDD+ implementation.

5 Outcome-level interactions between forest institutions and REDD+ projects

We find that forestry institutions have considerable impact on the effectiveness of REDD+, and that the impacts originate from the rules regarding community forestry, timber processing and reforestation. We will discuss each in turn and explain how they lead to policy conflicts.

5.1 Community forests rules and REDD+

Three features related to community forestry that exacerbate policy conflicts in our case study sites are: (1) the complexity of community forest procedures; (2) their incompatibility with local norms; and (3) the inability of forestry institutions to control encroachment by outside loggers. The 1994 Forest Law introduced community forests to meet the objectives of decentralization, forest self-management, empowerment and rural employment (Logo 2003, de Blas, Ruiz-Pérez, and Vermeulen 2011). However, instead of devolving power, new rules such as the requirement of central approval of community forestry management plans increased State control, weakening the ability of communities to make their own decisions and impacting livelihoods. This is most evident in the forest-rich area in the South, as indicated by these quotes:

“We are not on board with this, it is all as if we have been deprived of our freedom. You have to go to the state, you have to do all the paperwork and it is costly. We had always known how the forest was shared among families here, but when they say that it belongs to the state, can someone [logging company mandated by the state] enter into the forest of a village and just start working? That just creates a disorder! People knew that to work in a particular space in the forest they would need to meet and negotiate with whoever had customary right over that space. We were well organized and the law created social disorganization at the community level”. (Local actor from case study 1).

The frictions between statutory and customary rules have further weakened local communal resource institutions leading villagers to establish private plantations within community forests and claim ownership of trees. They then sell these trees to nearby logging operators. The resulting rush in land clearing undermines forestry and subsequently REDD+ outcomes as illustrated by a community leader from the South:

“Villagers have developed a taste for this, you would hear them say “I worked this plot, that is my tree,”. This made them lazy, they would spend time walking in the forest in search of certain tree species, and when they find those they clear the area underneath to say “this is my plot”. Then what happens when the government authorizes forest companies to extract timber in areas nearby? As they drive through the community forest to their logging sites, if they see appealing tree species they will come back and negotiate sales with plot owners. And while the State thinks these operators are logging in the sites they were shown, they are actually working elsewhere. It is pitiful. Before we knew, all the trees were gone”. (Local actor from case study 2)

Timber theft has also spread like wildfire in the region and a new local term has emerged for unauthorized loggers: “Warap”, which means “very fast, quickly done, done immediately” (interviewee). The inability of the administration to enforce its own forest rules and control encroachment further exacerbates the problem:

“These Waraps make it through all the timber checkpoints and clearance all the way to the port: Would they succeed if the government did not grant them the licenses and consignments? Then they come to the village and say that we should preserve the forest. Anyway, I need money and if I find the way I will continue to deal, they will go sort it out up there”. (Community forest beneficiary).

5.2 Implementation of local timber processing rules and REDD+

The 1994 forest law also sought to increase local timber processing through tax incentives, restrictions on the export of unprocessed round logs, and compelling logging companies to set up local wood processing facilities. Local wood processing supports livelihoods and eases pressure on forest resources. If effectively implemented, it could also synergistically support REDD+ outcomes. However, sawmills in the Djoum subdivision of the South region closed down. People reverted to exploiting forest resources, with adverse effects on sustainable forest management projects in the South and far-reaching ramifications on reforestation projects in the West. A forestry official from the South explained:

“There was a sawmill here that hired many people, so locals were busy at work. Since the company shut down, people have been jobless and are engaging in all sorts of crimes. That is why I say that illegal practices are to some extent linked to unemployment. [...]. The sawmill that closed down was special in that it processed wood within this subdivision and employed a whole team. When timber is processed here, wood waste is collected to supply a local industry: there were charcoal makers who lived out of charcoal production. Some locals were involved in charcoal trade. Those who own a stroller would transport charcoal to the market place. Others earned money on loading charcoal on trucks for shipment to major cities. From wood waste, some could make a chair or a bed, so there was something for everybody and fewer problems; poaching or illegal logging were minimal”. (Forest official)

The growth of unauthorized logging has compromised the outcomes of sustainable forest management initiatives and is compounded by failures in the timber monitoring chain, which affects the domestic timber market and REDD+ reforestation projects. The domestic timber market is supplied by artisanal logging from the non-permanent forest estate, which includes community forests (Robiglio, Lescuyer, and Cerutti 2013, Mahonghol, Ngeh, and Chen 2017). While domestic timber demand is increasing, unauthorized logging in community forests is mostly for export, which reduces domestic wood supply and increases pressure on trees planted in less forested regions. Participants from case study 3 in the savanna area reported:

“The reserve is exposed, there are entry points everywhere and heavy pressures from unauthorized cuts for fuelwood and timber. Residents intrude in the reserve to steal wood to meet their household energy needs, for construction and to sell”. (Participant)

5.3 Reforestation areas and REDD+ projects

In case study 3 in the West of the country, REDD+ project outcomes have been compromised by outcome-level interaction from reforestation rules. According to the 1994 forest law, reforestation sites are to provide forest products and/or protect fragile ecosystems. The Bana-Bapouh forest reserve in West Cameroon was planted with eucalyptus to prevent landslips. The plantation negatively affected local livelihoods, which in turn eroded adherence to REDD+ reforestation activities. Locals suggest that eucalyptus has a number of detrimental effects on both farming and animal husbandry:

“Eucalyptus sucks a lot of water, so farmers are now obliged to go down in swampy areas to create farms, and there is not enough space for everyone there.”(Farmer)

“Moreover, grasses do not grow around these trees, because eucalyptus roots are not only very invasive, their leaves render the soil sterile when they shed. So now, we have to take our cattle very far away from the village to feed them.”(Pastoralist)

Different forms of resistance, such as claiming ignorance, are used locally to avoid open conflict. Conversely, forest officers, who are aware of the impacts of the reserve are reluctant to act against encroachment as reported by a forest officer from the West region:

“The reserve was created long ago, in 1947, and the Whites who created it did not leave any map, we cannot find the map and the boundaries, and this is also what hampers reforestation. [...]. The council does not know where the reserve lies, since the people from 1947 are no more, and when we ask the elderly they prefer to say they do not know even if they do, for fear of being told that they encroach in the reserve. The reserve has therefore been invaded and those who settled in are convinced they are on their land. We cannot expel them, where would we relocate them? So, it is a little difficult”. (Forest officer)

6 Discussion

In terms of implementation typology, case studies 1 and 2 in the forested South are representative of political implementation. Low policy ambiguity and high level of conflict emerge from diverging views of central and local actors over the drivers of deforestation and the suitability of REDD+ activities. The project targets small-scale slash-and-burn agriculture, while local people blame large-scale agriculture for deforestation. Kotto-Same et al. (1997) hold that harmless slash-and-burn where discrete forest patches are partially cleared for short-term cultivation does not longer exist in the forest regions of Cameroon, but other studies indicate that community fallow lands always retain standing stock of valuable indigenous timber because of the tradition of preserving multipurpose trees (Robiglio, Lescuyer, and Cerutti 2013). On the other hand, large-scale developmental projects are smaller in number, but each leads to large forest loss. For example, the recently approved rubber plantation in Djoum led to the clearing of 40,000 ha of natural forest (Assembe-Mvondo et al. 2015). The Nkout iron ore deposit has been granted mining permits in forest zones and will give way to major infrastructure projects including railroads (KPMG 2013).

Opposing views on deforestation drivers and differences in knowledge between national actors and local stakeholders have fuelled conflicts over REDD+ activities. Improved agricultural technologies such as high-yield cocoa plants introduced by REDD+ projects to increase productivity and deter shifting cultivation have not been adopted by implementers in the South because they are labor intensive. Waller et al. (1998) note that experience with traditional farming practices correlates negatively with the adoption of innovations. This may explain why local actors hold onto beliefs that plantain achieves better yields in virgin forests, that burning improves soil fertility, and that mineral fertilizers affect the organoleptic properties of crops. Although slash and burn is deemed inefficient, Zhang and Pikun (1995) suggest it may reduce soil acidity because ashes increase pH, eliminate wild grasses and their seeds, and destroy pests' eggs thus improving disease control. REDD+ projects' promotion for sedentary farming is founded in the notion that agricultural intensification is a strategy to mitigate climate change (Gockowski and Asten 2012). Ordway et al. (2019) recommends intensifying agricultural production through higher yielding and disease resistant crop varieties and fertilizer use. While case studies 1 and 2 from the South show that improved crop varieties may not necessarily suit local conditions, traditional burning and mineral fertilization both lead to greenhouse gas emissions. Mineral fertilizers are imported to Cameroon, and 7% of China's emissions, the largest manufacturer of fertilizers, originate from nitrogenous fertilizer production (Zhang et al. 2013). This raises questions about global emissions displacement or leakages in REDD+ projects (Atela et al. 2016). Thus, all things considered, the proposed improved agricultural techniques and local farming practices all generate greenhouse gas emissions.

In instances of political implementation, outcomes are determined by power balance between involved actor groups and by whether one has sufficient power to force its will on the other or sufficient resources to bargain an agreement on means (Matland 1995). Thus, the project goals in case studies 1 and 2 require either coercion or negotiation. While coercion might work when implementers operate under a central authority, in our case studies implementers and policy/project designers are independent entities and involvement in REDD+ projects is voluntary. Therefore, negotiations will be key to compliance. Moreover, the effectiveness of central action presupposes knowledge of locally appropriate implementation practices.

In our cases, this would require the involvement of all project implementers early in the decision making process and policy designers' ability to broker locally appropriate solutions that preserve implementers' preferences and minimize labor. Such an approach would also help reduce conflict. Cerbu et al. (2013) and Chia et al. (2013) proposed ramping up local capacity in newly introduced

REDD+ practices. While capacity improvement could be helpful in experimental implementation, conservation initiatives that bar access to forest resources and ramp up local capacity in introduced practices may be ineffectual in the context of political implementation when the very basis of the project is questioned.

Our case studies corroborate that policy conflict and ambiguity are often negatively correlated (Regan 1984). In case study 3, low level of conflict occurred with high level of ambiguity about the REDD+ project objectives. Beneficiaries' lack of awareness of carbon credits in Bana-Bapouh resonates with the findings from Mount Cameroon, where REDD+ carbon payments were not discussed to avoid disappointment in the context of funding uncertainty (Awono et al. (2014). Low level of conflict may be related to local culture and scale of change. Among the Bamileke, traditional chieftainship is deeply entrenched and the moral authority of local dignitaries is high, which may explain rule adherence. The position of case studies on the forest transition curve also explains lower levels of conflict. In the western savanna where there is less forest, slash and burn is uncommon. This means limited change to existing practices due to proposed agricultural interventions, making adoption easier. Project outcomes in experimental implementation rest on local resources and skills (Matland 1995). Thus, resource availability and social capital, particularly local authorities' capacity to support communities, influence REDD+ outcomes.

Interference from forestry regulations and their implementation failures impacted both local resource availability and weakened local institutions, jeopardising REDD+ outcomes. Slow and limited decentralization, as well as lengthy legal procedures have impeded communities' compliance with community forest rules and led to practices that have accelerated the degradation of forest resources, impeding REDD+ projects. The heavy central control of community forests departs from the logic of decentralization of devolving not just responsibilities, but decision-making power and resources to local actors (Cheka 2007). Wynet (2006) found perplexity among community members in the South-West as to whether they need to apply to secure access and control over forests they thought were always theirs. The path from the demarcation of a community forest to approval of forest operations is lengthy and slow. Oyono (2004) indicates that some villagers had to wait two years to get a response to their application because administrative authorities and officials of the ministry of forests asked for money. Our participant claimed the process in their case took eight years and hit a dead end. Analyses of the community forestry concept in Cameroon have highlighted the complexity of procedures, high compliance costs, and questioned its stated aim of including local people in forest management (Yufanyi Movuh 2012), finding that in fact, it has disenfranchised remote underprivileged forest villages such as Nkolonyeng. The illicit timber trade has further led to the degradation of community forests at a rate that outpaces the effects of forest loss reduction initiatives.

The failure to enforce export restrictions of raw logs intended to incentivize local timber processing, and the shift from the European to Asian markets preferring raw logs (Kaplinsky, McCormick, and Morris 2007, Cerutti et al. 2011, Eba'a Atyi et al. 2013) has transformed a policy that could be synergistic with REDD+ into one that worsened local living conditions and fuelled deforestation. The export restrictions initially increased timber processing in the country to about 95% by 2006, with the majority of export destined to European markets (Cerutti et al. 2011, Eba'a Atyi et al. 2013). Local timber processing has however since declined as the Asian market that prefers raw logs has become more important destination for African timber (Cerutti et al. 2011, Eba'a Atyi et al. 2013). It is suggested that African countries turn toward Asian markets to escape the pressure from western governments for better forest governance (Kaplinsky, McCormick, and Morris 2007, Beuret, Michel, and Woods 2008). If the Asian timber market expansion slows the national timber industry, detrimental implications for job creation and living conditions may interfere with REDD+. Cameroon ratified the European Union-led FLEGT agreement in 2011, which aims to track wood legality from harvest to export (Eba'a Atyi et al. 2013). Tegegne et al. (2014) see potentially synergistic interaction between FLEGT and REDD+'s goals of promoting sustainable forest management. However, FLEGT may reorient timber suppliers toward less-constraining markets with a preference for unprocessed products

and disincentivize local wood processing, representing a disruptive outcome-level interplay between FLEGT and REDD+. The closure of the main timber processing company in Djoum has exposed locals to illegal activities, and community members considered it difficult to constrain the ‘warap’ practice during financial hardship. Such unintended consequences can have detrimental ramifications for reforestation projects facing growing national demand for timber from the non-permanent forest estate (Robiglio, Lescuyer, and Cerutti 2013), which is increasingly oriented toward export as a result of unauthorized practices and limited enforcement of forest rules.

7 Conclusion

We analysed the implementation typology of three REDD+ projects in South and West Cameroon to identify the key determinants of their outcomes, and examined how these have been shaped by horizontal interactions from forestry institutions. We found that REDD+ projects represented political implementation in the South and experimental implementation in the West. The results suggest that central policy designers' ability to propose alternatives that meet implementers' preferences and mitigate labor implications are key to improve project outcomes in the South. In the West, the capacity of local actors, their resources and the level of social capital will matter for implementation success. Opposing views on drivers of deforestation may call for a comparative assessment of emissions profile between shifting slash and burn farming practices and improved agricultural methods supported by energy-intensive industrial processes. REDD+ stakeholders would equally benefit from social capital assessments in project implementation sites, particularly in areas showing signs of experimental implementation.

We have also shown that to understand conflict and failures in REDD+ we need to look beyond a specific REDD+ policy domain. Environmentally-oriented sectors such as forestry institutions that pursue the identical goal of sustainable forest management can still conflict with REDD+ at the operational level. The limited devolution of power and of resources that occurred under Cameroon's approach to decentralization has exacerbated the community forest crisis and hampered forest carbon emission reduction projects as well as forest restoration activities. Thus, REDD+ schemes would be aided by measures to improve forest governance and promote the local timber industry. Further in-depth studies on the management of institutional interactions are also required to enhance synergistic interactions and avert or minimize disruptive institutional interplay beyond REDD+.

By combining a policy implementation and institutional interaction framework, this research offers a comprehensive examination of REDD+ implementation in Cameroon that takes account not just of factors within the climate change policy boundaries, but also external influences from interrelated institutions.

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There is evidence that institutions related to climate change and natural resource management influence each other's performance, and that local settings also shape policy outcomes. We examine how policy implementation processes and institutional interactions affect the Reducing Emissions from Deforestation and Forest Degradation (REDD+) program in Cameroon. Research on REDD+ implementation has focused on resource tenure, benefit-sharing and participation, giving less attention to how implementation paradigms and other institutions affect REDD+. We combine a policy implementation framework with the theories of institutional interaction to examine how REDD+ implementation typologies, and interactions with forestry regulations influence the outcomes of three REDD+ pilot projects in South and West Cameroon. Drawing from focus group discussions with project beneficiaries and interviews with local stakeholders and land-users, we find that REDD+ projects epitomize political implementation in the South and experimental implementation in the West. We also indicate how project outcomes have been affected by rules regarding community forests, reforestation and timber processing. Our findings suggest that policy designers' ability to satisfy community preferences is important for projects' outcomes in the South, and that resource availability and social capital are pivotal in the West. Incentives to promote local timber processing, improve forest governance and expedite decentralization would improve REDD+ project implementation in Cameroon.



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