Governing the jungle: REDD+ and forest governance in the Democratic Republic of Congo: an analysis of drivers, tenure, gender and participation

Styresett i Kongos jungel: REDD+ og skogforvaltning i Den demokratiske republikken Kongo – en studie av drivkrefter, rettigheter, kjønnsroller og deltakelse
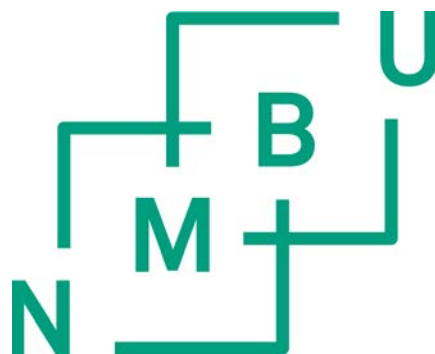
Philosophiae Doctor (PhD) Thesis

Raymond Achu Samndong

Department of Environment and Development Studies (Noragric)

Faculty of Landscape and Society

Norwegian University of Life Sciences

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Summary

This thesis focuses on forest governance and the establishment of Reducing Emissions from Deforestation and Forest Degradation (REDD+) pilot projects in the Équateur province of the Democratic Republic of Congo (DRC). The province is considered to host 28 per cent of the total forest area in the DRC and has been selected for the national REDD+ integrated programme supported by the Central Africa Forest Initiative. The programme is launched in a context in which the use and management of forests do not meet the needs and aspirations of forest-dependent communities. Increased poverty is actually observed, a trend that seems to be caused by weak institutions and enforcement, conflicting claims over forests and exclusion of forest dwellers and marginalised groups (Batwa Pygmies) with regards to decision-making about forest resources and access to benefits.

REDD+ is based on the observation that halting deforestation could be a cost-effective way to reduce climate gas emissions. This has created strong international interest in protecting forest cover in the tropics, while there is also emphasis on improving rural livelihoods at the local level. The aim of this study is to understand and analyse the complexities that face the establishment of REDD+ in a context like that of the DRC. In doing so, the study focuses on a set of specific issues related to forest governance and the establishment of REDD+ pilot projects. Firstly, it assesses previous forestry and development interventions in Équateur province. Secondly, it examines the complexities of deforestation and its drivers. Thirdly, it examines existing institutional structures of forest governance and their implications for REDD+. Fourthly, it examines the role of gender in forest governance and the establishment of REDD+ pilot projects. Finally, it examines community participation in the process of introducing REDD+.

The study applies an interdisciplinary theoretical approach — including classical and critical institutional theories, political ecology, theories of participation and environmental governance — in investigating these issues. The study applies a case study research design and combines different data collection techniques, including document analysis, semi-structured interviews/key informant interviews, focus group discussions, household surveys, participant observation, field observation and Global Positioning System (GPS) waypoint collection in responding to the aim of the study and the research questions.

The key findings in the summaries of the five interrelated research papers that make up the thesis are now presented:

*1.	What are the effects of recognition by intervening forestry and development agencies on substantive citizenship in Équateur province in the DRC? (Paper 1)*

The paper examines power relations and the accountability of local authorities involved in forestry and development interventions, in order to understand the effects of these interventions on substantive citizenship — as defined as the ability of an individual to influence those who govern. The study found that in the absence of elected local government officials, forestry and development agencies chose to partner with identity-based customary authorities and interest-based non-government organisations (NGOs). These chosen authority structures were not directly accountable to the local people, but to their partnerships with higher level forestry and development agencies that gave them public powers over resources. This placed them in a position of authority over those who used these public resources in the absence of elected local government officials. While these empowered local authority structures were open to some local influence, local people lacked the ability to substantively influence the decisions made by actors in these chosen local authority structures. Hence, local people could not fully engage as citizens. This case study suggests that recognising identity and or interest-based local authority structures by agencies currently promoting carbon forestry in DRC exacerbates existing unequal power relations and further narrows inclusive local democracy and effective community participation in decision-making processes.

*2.	What are the dynamics of deforestation in Équateur province with respect to both proximate and underlying causes? (Paper 2)*

This paper applies the environmental governance framework to analyse both proximate and underlying causes of deforestation in two REDD+ pilots in Équateur province. The study found that agricultural expansion, through shifting cultivation, was the main proximate cause of deforestation. This activity was accelerated by logging, which simplified the clearing of land. Logging also contributed to the total biomass loss from the forest. Shifting cultivation was driven by the poverty conditions of the study area. Poverty was also linked to the political and institutional structures of forest governance. These structures were controlled by political elites who influenced local decisions to clear forests. The study suggests that actions to curb deforestation must address underlying causes through effective land use planning, and by developing robust and accountable institutions; as well as offering alternative economic opportunities, while promoting the political empowerment of the local population.

*3.	How do existing forest tenures influence forest governance and REDD+ implementation in Équateur province? (Paper 3)*

This paper utilises an adapted version of the environmental governance framework, combined with the institutional bricolage approach, to assess existing forest tenure systems in Équateur province and their implications for REDD+ development in the DRC. Using information gathered from interviews, focus groups, field observations and policy document analysis, this paper demonstrates that REDD+ has not been well adapted to the institutional structures of forest governance in the DRC, including both statutory and customary tenure. The lack of harmonisation between these systems has created a situation of competition between state and customary authorities. This has produced opportunities for powerful actors to 'shop' between the two systems in legitimatising their expanded use and control over forest resources. As the REDD+ process evolves from a preparation to an implementation phase, competing institutional structures create problems regarding ensuring an effective REDD+ regime. The distribution of costs and benefits may also be negatively affected. While the newly enacted community forest law provides an opportunity to recognise customary rights to forest land, the lack of functional local government at the district and village levels have prompted REDD+ pilot project organisers to establish new village organisations for REDD+. This illustrates problems with establishing a legitimate and functional REDD+ regime in the DRC.

4.   To what extent does gender inclusion shape forest governance and ongoing REDD+ intervention in Équateur province? (Paper 4)

This paper uses a gender lens to assess participation by men and women in forest governance and REDD+ piloting in Équateur province. Employing the Agarwal (2001) participation framework and using data from interviews, focus group discussions and field observations, the paper shows that men and women have different knowledge and uses of forests, and that these differences are not given due consideration in forest governance. The voices of women have often been muted in decision-making arenas and — compared to men — women occupy only nominal positions in both forestry and development initiatives. This status quo extended to the REDD+ pilot projects as well. Women have limited information about REDD+, compared to men. The mechanisms used to establish new village organisations for REDD+ exclude women from decision-making in the ongoing REDD+ pilot projects. The study shows that the bargaining power of women for equal inclusion in decision-making processes and for sharing benefits is constrained by existing social norms. These norms include local access to land and material resources; the existing gender division of labour; local perceptions regarding the roles, contributions and responsibilities of women; and the dominant positions of men in rural settings. For a gender transformative REDD+, the study suggests that REDD+ actors should attempt to bring about institutional change that transforms gender relations, and thereby increases the bargaining power of women.

*5.	What characterises the process of introducing REDD+ activities with respect to community participation in Équateur province? (Paper 5)*

This paper applies the Arnstein (1969) framework of participation to assess community participation in the introduction of REDD+ in two pilot sites in Équateur province. The paper found that community participation in REDD+ introductions was characterised as 'tokenism', with community members consulted and informed, but never achieving managerial power and influence over the REDD+ pilot project. The decision for the communities to join REDD+ was not democratic, and information provided during the introduction processes was insufficient for community members to make informed decisions about joining REDD+. The project organiser had full control over the dissemination of information and chose to provide only information that could motivate the community members to accept the REDD+ project. The institutional arrangement to enable 'full and effective community participation' was weak and excluded women. Community participation in the project did not go beyond labour supply in activities and attending meetings for per diems, as the customary chief had full control over the information about these activities. The paper argues that ensuring meaningful participation, as defined by the REDD+ social safeguard guidelines, might be difficult to achieve if social inequalities and local power relations are not acknowledged and addressed during REDD+ implementation.

Sammendrag

Denne avhandlingen omhandler skogbruksforvaltning og etableringen av pilotprosjekter rettet mot reduksjon av klimautslipp fra avskoging (Reducing Emissions from Deforestation and Forest Degradation, REDD+) i Équateur-provinsen i Den demokratiske republikken Kongo (DRC). Det anslås at denne provinsen har 28 prosent av skogen i DRC, og den har blitt valgt ut til å delta i det nasjonale REDD+ programmet støttet av Central Africa Forest Initiative. REDD+ lanseres i et område der skogbruket ikke evner å møte behovene til befolkningen. Fattigdommen blant den skogavhengige befolkingen er økende. Dette er en trend som ser ut til å skyldes svake institusjoner med svak håndheving, motstridende krav vedrørende adgang til skogressursene, utestengelse av lokalbefolkningen – ikke minst særlig marginaliserte grupper (Batwa-pygmeer) – fra arenaer der viktige beslutninger om bruk av skogressurser og fordeling av avkastning tas.

REDD+ baseres på at redusert avskoging er en kostnadseffektiv strategi for reduserte klimagassutslipp. Dette har skapt sterk internasjonal interesse for å beskytte skog i tropene. Samtidig det som et mål å forbedre livsvilkårene for lokalbefolkningen. Formålet med studien som presenteres her er å analysere etableringen av REDD+ i en kontekst som den i DRC med all dens kompleksiteter. Dette gjøres ved å fokusere på et sett med spesifikke problemstillinger relatert til skogbruk og etableringen av REDD+ pilotprosjekter. For det første vurderes effekter av tidligere skogbruks- og utviklingsprosjekter i Équateur-provinsen. For det andre ser studien nøye på de komplekse drivkreftene bak avskoging i området. For det tredje analyseres den eksisterende institusjonelle strukturene i skogbruket og hvilke implikasjoner disse har for gjennomføringen av REDD+. For det fjerde studeres kjønnsrollers betydning i skogbruk og etableringen av REDD+ pilotprosjekter. Til slutt analyseres lokalbefolkningens deltakelse i prosessen med å introdusere REDD+.

Disse problemstillingene analyseres med basis i en tverrfaglig teoretisk tilnærming. Studien drar på innsikt fra klassisk og kritisk institusjonell teori, politisk økologi, teorier om deltakelse og miljøforvaltning. Studien anvender en case-studie metodologi og kombinerer ulike datainnsamlingsteknikker for å svare på forskningsspørsmålene. Disse teknikkene inkluderer dokumentanalyser, semi-strukturerte intervjuer/intervjuer med nøkkelinformanter, fokusgruppediskusjoner, husholdsundersøkelser, deltakende observasjon, feltobservasjon og innsamling av GPS-veipunkter.

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Dedication

This thesis is dedicated to my beloved wife Nanji Rosemary Ogwe and my three children — Ryan-Ray, Edna-Reona and Randy-Rice — for their profound love and endurance. My wife: your sense of resiliency, encouragement, supportiveness and prayers have kept me focused throughout this journey.

Part I:
Synthesising Chapter

1.0 Introduction

1.1   Framing the problem

Forests cover about one-third of the Earth's land surface (FAO 2015) and provide services and resources supporting human subsistence and well-being. Forest ecosystems are crucial to the livelihoods, economic development, and cultural values of many people and governments in tropical countries. Forests host a great part of the planet's terrestrial biodiversity and the provision of ecosystem services (Gupta et al. 2013; Hassan et al. 2005). Forests also play an important role in regulating global climate through an ability to sequester carbon emitted to the atmosphere by burning fossil fuels, but deforestation releases this carbon back to the atmosphere. Hence, greenhouse gas emissions, primarily from tropical deforestation and forest degradation, make up an estimated 10–12 per cent of total man-made releases of greenhouse gases (GHGs) (Hansen et al. 2013; Le Quéré et al. 2015). Deforestation and forest degradation not only release carbon into the atmosphere, but also have a negative impact on biodiversity, watershed integrity, soil protection, and local climate regulation (IPCC 2007). As a result, increased forest loss in the tropics is likely to have dramatic consequences for the global climate, with a loss of ecosystem services affecting the livelihoods of forest-dependent communities who have limited capacity to adapt in the changing climate (IPCC 2013).

Deforestation and forest degradation have a long history, and efforts to halt tropical deforestation have so far been largely unsuccessful, due to conflicting interests among the actors driving deforestation and the complexity of factors that drive deforestation (Angelsen & Kaimowits 1999; Geist & Lambin 2001; Walker 2004). Recent findings suggest that reducing deforestation may be a relatively inexpensive climate change mitigation option (Eliasch 2008; Stern 2007). This has prompted many governments in the world to bring the idea to the global climate change negotiation agenda. This way, the conservation of tropical forests has taken on new importance at the international level. In the context of the implementation of the United Nations Framework Convention on Climate Change (UNFCCC), tropical forest countries are encouraged to reduce GHG emissions from deforestation and forest degradation, conserve and sustainably manage their forests and enhance forest carbon stocks — a strategy referred to as

REDD+ (UNFCCC 2009). REDD+ has become an essential element in a viable global climate policy framework, and has gained global attention as a potentially effective and low-cost climate change mitigation option (Angelsen et al. 2012; Corbera & Schroeder 2011; Thompson et al. 2011; Vatn & Vedeld 2011). Moreover, it has been emphasised that REDD+ has the potential to provide a window of opportunity to developing countries to achieve the goals of sustainable development and poverty reduction, as well as biodiversity conservation (Angelsen 2008). While there could be synergies, such an "all-inclusive package-deal", there may also be important trade-offs/conflicts (Vatn et al. 2009).

The concept of reducing emissions from deforestation was first introduced at the 11th session of the UNFCCC Conference of the Parties (COP) in Montreal, 2005. The main idea of REDD+ is to provide positive financial incentives to countries to reduce emissions through avoided deforestation and forest degradation, and to compensate these countries based on their performance (Angelsen & McNeill 2012). To qualify for financial compensation under the UNFCCC, countries have to design and implement national REDD+ strategies. Today, REDD+ has become one of the key pillars of a post-2012 international climate regime after its recognition at the 21st Conference of the Parties (COP) of the UNFCCC in Paris (Paris Agreement). REDD+ is framed as a payment of ecosystem services (PES); hence, it is performance-based. It is formulated to solve a fundamental collective action problem by creating a system that provides tropical forest users with economic incentives to protect carbon sequestered and stored in trees (Angelsen 2008; Vatn & Vedeld 2011). This framing brings onboard key issues such as additionality, leakage, permanence and measurable/verifiable necessary to ensure that the carbon sequestered and stored in trees is protected. The intangible nature of carbon emissions reductions in forests poses both challenges in their quantification and conceptual challenges for their regulation. These issues are difficult to address and, as a result, incentives for REDD+ require more sophisticated regulatory frameworks than many other PES systems, because — as part of the climate agreement — precise measurement is demanded. One of the greatest challenges in designing REDD+ mechanisms is determining what institutional choice and implementation strategies will be effective and efficient, providing equitable outcomes (Vatn & Angelsen 2009; Vatn & Vedeld 2013). In addition to current attention to the international and national REDD+ architecture (Atela et al. 2015), there is a pressing need to focus on the regional and local architecture in which the day-to-day use of

forests takes place — and to understand the effectiveness of existing forest governance structures in halting deforestation. Based on this pressing need, the overall aim of this research is to analyse the processes and outcomes of REDD+ institutional choices in an early REDD+ pilot initiative in Équateur province. In doing so, this research identifies key challenges in the REDD+ institutional design at the local level that are necessary to inform the REDD+ investment programme in the Democratic Republic of Congo (DRC).

Given its immense forest wealth, the DRC became the first country in the Congo Basin region to benefit from REDD+ financing through the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Development Countries (UN–REDD Programme) and World Bank Forest Carbon Partnership Facility (FCPF) to develop an REDD+ programme. With financial support from donor agencies and bilateral organisations, the DRC developed its REDD+ Readiness Preparation Proposal (R-PP) that was approved by the UN–REDD and World Bank FCPF in 2010 (MECNT 2010). The R-PP set up a roadmap of the national REDD+ process from 2010–12. The country has also developed its National Strategic Framework for REDD for 2013–30, and this was endorsed in December 2012 (GDRC 2012). Congolese civil society organisations established a platform known as Climate and REDD Working Group — *Groupe de Travail Climat REDD* (GTCR). It is strongly engaged in the national REDD+ process.

In 2011, many REDD+ pilot projects were initiated with financial support from the Congo Basin Forest Fund to back the REDD+ readiness programme. The REDD+ pilot projects were developed primarily for testing ways to introduce REDD+ on the ground and generate lessons for the REDD+ investment phase. In addition, other REDD+ projects have been developed and run by the private sector to produce and then trade stored carbon in the voluntary markets (Nhantumbo & Samndong 2013; Nhantumbo & Camargo 2015). Apart from this, the DRC has launched the largest emission reduction programme at a jurisdictional or landscape level in Africa as approved and supported by the World Bank Forest Carbon Partnership Facility Carbon Fund (FCPF 2016). The DRC recently developed an REDD+ Investment Plan that has been adopted by the United Nation Development Programme (GDRC 2015). This plan outlines the Government's priorities and framework to support and guide major REDD+ investments in the DRC through integrated REDD+ programmes (GDRC 2015). The investment plan has been

approved for funding from the Central African Forest Initiative (CAFI)[1], which was launched in 2015 by the Norwegian Government and other governments in the European Union.

Despite all these developments in the REDD+ national programme, it is still uncertain how the national REDD+ strategy will transform local land use practices. A fundamental challenge for the REDD+ programme is that the forest is governed by both statutory and customary tenures that are not harmonised (Benneker 2012; Lawson 2014; Samndong & Nhantumbo 2015). Past efforts to regulate forest use and management have been very centralised, undermining customary tenure (Oyono & Nzuzi 2006). Furthermore, there are no formal organisational structures at the local level that can be responsible for implementing REDD+, since 2006, decentralisation reforms have occurred and such a structure has yet to be established. Past forestry and development interventions at the local level have somehow excluded the locals in decision-making processes and benefit sharing (Klaver 2009; Samndong 2015; Yamba 2009). While the recent law on community forestry provides opportunities to promote participatory forest management, it is yet to go operational. In addition, the drivers of land use change are very complex in the DRC and vary across different landscapes in the country. Hence, there is a strong need to better understand and analyse key drivers of deforestation, the complexity surrounding forest tenure and mechanisms for ensuring the 'full and effective participation' of local communities in REDD+ activities, in order for the national REDD+ strategy to transform land use practices at the local level.

1.2   Objective and research questions of the study

The overall objective of the thesis is to assess forest governance and the establishment of REDD+ pilot projects in Équateur province of the DRC. In relation to the aim, it is important to note that the establishment of REDD+ in the country is characterised by strong engagement by international actors who engage in protecting the carbon stored in forests — both to mitigate the effects of climate change and to improve the livelihood of forest communities who rely on this forest for survival. The province hosts 30 per cent of the forest landscape in the DRC with

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[1] The Central African Forest Initiative is a partnership agreement between selected European countries and Congo Basin Forest countries to support initiatives to halt deforestation and forest degradation in the Congo Basin Region. http://mptf.undp.org/factsheet/fund/AFI00

a record rate of deforestation, and has been listed in the DRC integrated REDD+ investment programme.

Based on the overall objective, five research questions have been formulated, specifying what aspects concerning forest governance and the process of introducing REDD+ that are emphasized in the research undertaken:

1.   What are the effects of recognition by intervening forestry and development agencies on substantive citizenship in Équateur province in the DRC?

    1.1.   What forms of inclusion or exclusion are produced or reproduced when intervening agencies accord recognition to both identity and residency-based local institutions?

    1.2.   How have these forms of inclusions or exclusions shaped representation and equity concerning decisions in forestry and development interventions in the Équateur province?

2.   What are the dynamics of deforestation in Équateur province with respect to both proximate and underlying causes?

    2.1.   What activities cause deforestation in the pilot project area?

    2.2.   What are the most important underlying dynamics influencing this process?

    2.3.   What are the implications for the DRC REDD+ strategy?

3.   How do existing forest tenures influence forest governance and REDD+ implementation in Équateur province?

    3.1.   How does institutional pluralism affect local forest use?

    3.2.   What are the effects of this pluralism to the implementation of REDD+?

4.   To what extent does gender inclusion shape forest governance and ongoing REDD+ intervention in Équateur province?

    4.1.   How do men and women differ in knowledge, access and use of forests in the pilot sites?

4.2   How are men and women included in decision-making and benefit sharing in existing forestry and development interventions, as well as ongoing REDD+ pilot activities?

4.3.   What factors influence women's inclusion in decision-making and benefit sharing in these interventions?

5.   What characterises the process of introducing REDD+ activities with respect to community participation in Équateur province?

5.1.   How and who are involved in different processes of introducing REDD+ in the pilot sites?

5.2.   How do local people perceive the process of introducing REDD+ in their communities?

5.3.   What are the challenges in promoting meaningful local participation in the REDD+ process of the DRC?

1.3   The structure of the thesis

The thesis consists of five independent papers that investigate the respective research questions. This introduction chapter aims to present a theoretical, methodological and contextual framework in which the overall results and analysis can be understood in a coherent manner. The introduction goes into greater detail about the theories, methods and fieldwork than the individual papers, which have an article-based format.

The introduction chapter is structured as follows: following the introduction, section 2 presents the theoretical foundations and frameworks that have been used as a basis for the research. Section 3 presents a historical overview of forest governance in the DRC and the REDD+ programme of the country with its progress. Section 4 presents the context of the studies and the research methods used. It includes an overview of the existing institutions and actors engaged in forest governance in Équateur province and the REDD+ pilot sites. It also discusses the methodological approach of the study, the rationale for the selection of case study provinces, villages and households for the various types of data collection, and key challenges and obstacles encountered during the fieldwork. Section 5 presents a summary of the respective

papers and discusses the contribution made by each paper to the overall body of knowledge, as well as the theoretical debate. Section 6 concludes the introduction chapter. It presents the main findings related to the research questions and discusses the significance and contribution of the findings, before reflecting on future research needs.

2.0 Theoretical and conceptual framework

The central aim of this thesis is to understand and analyse the relative role of policies regarding the use and management of forestland in the Équateur province of the DRC. An important notion that underpins this study is that tropical forest landscapes are complex social–ecological systems (Berkes et al. 2000; Turner et al. 2003) with various context-specific, interlinked, cross-scale and dynamic biophysical and social dimensions. This complexity means that tropical forests are characterised by conflicts regarding their use and management. Hence, regulating their uses requires tremendous coordinated efforts for protection (Vatn 2015). In addition, there is not a single theory or discipline that can simultaneously address these issues. Such a study therefore requires an interdisciplinary approach and a set of theoretical, analytical and methodological tools that can bring distinct and complementary insights into the issue of concern. Such a strategy demands great care, as there is a risk of theoretical and methodological contradictions that undermine the analytical and explanatory power of such a research study. The overall approach adopted in this thesis is founded on institutional theory, with some insight from political ecology. The analytical framework adopted is compatible with a range of pertinent disciplines.

The forest is a typical example of a linked social–ecological system consisting of dynamic ecosystems that create living conditions for a large number of species, for whom interaction with humans also supports the wellbeing of the latter (Berkes et al. 2008). From an ecological perspective, the forest as an ecosystem is characterised by flows of matter, energy and interactions between species at different levels. It 'functions' based on interdependencies between different parts and processes that form the entire system and its services (Berkes et al. 2008). From an anthropocentric perspective, the forest is characterised as a stock and flow of material resources and energy necessary to sustain a host of life forms (Berkes et al. 2008; Vatn 2015). The stock of these resources might be either renewable or non-renewable — such as the stock of forest products, and services the size of forestland converted into agricultural land.

One of the biggest challenges today is how to sustainably manage a linked social–ecological system, such as a forest, for both ecosystem integrity and human well-being (Folke 2006; Quandt 2016). How can we maintain important ecosystem dynamics and the stock and flow of

resources, while also allowing humans to maintain their livelihoods? This question touches on the issue of sustainability; that is, will there be enough resources to sustain present and future generations and allow the world's poor to catch up? Different theoretical approaches have been developed in an attempt to answer this question by informing the management of social–ecological systems, such as the resilience approach, the institutional position and the political ecology approach. The resilience approach focuses on the capacity of a social–ecological system to absorb disturbance or shock and still retain its basic function and structure (Berkes et al. 2008; Walker & Salt 2012). The institutional approach may be divided in two; that is, the 'new' and the 'classic'. The new focuses mainly on external rules and regulations established for managing a social–ecological system and coordinating human action (Ostrom 2009).[2] The classical tradition expands the focus by emphasising institutions as also 'creating' the actors, as well as going deeper into the political, economic and social processes that form the institutions (Hodgson 1988; Vatn 2005).[3] Political ecology may be less interested in the role of institutions, and emphasises political, economic and social processes underlying human action. It focuses largely on power relations when understanding the complex interconnection between local and global political economies and ecosystems (Robbins 2004; Turner 2014). While all these approaches are important to understanding and analysing a social–ecological system, this thesis adopts the classical institutional approach with some insight from political ecology.

In this study, I therefore draw on classical institutional theory to understand and analyse resource regimes/policy instruments regarding the use and management of forest resources and how human coordination is facilitated to achieve policy goals and resolve conflicts. This theoretical foundation is built on the understanding that the motivation that drives human actions is socially constructed and depends on the context (Vatn 2015). The overall ontological and epistemological framework is inspired by critical realism, implying a view that complex phenomena — like forest use and management — are generated by a multiplicity of causal structures and mechanisms (Bhaskar 2010). The thesis also draws on insights into political ecology strongly associated with critical realism in exploring the relationships between politics

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[2] An important basis for this tradition is North (1990), while his interest is not in socio–ecological systems.
[3] There is a development in Ostrom's work. Ostrom (2009) widens the perspective to include the wider political and economic contexts. It is also notable that throughout her work, she left the methodological individualist position (implicit) in new economic institutionalism.

and nature (Neumann 2005 p. 2) and providing understandings which work "to demonstrate the undesirable impacts of external interventions, especially from the point of view of local people, marginal groups, and vulnerable populations" (Robbins 2004 p. 12). It is a central premise in classical institutional theory, as well as political ecology, that interventions into social–ecological systems (such as forest use and protection under REDD+) cannot be understood without considering the political and economic structures and institutions within which interventions are embedded (see Cleaver 2012; Neumann 2005).

These theoretical approaches and the analytical framework used in this study are addressed in this chapter. The next section frames the analysis of the study by placing forest use and management within the field of environmental governance. Next, the theoretical approaches used are presented and discussed. The final section presents and discusses the analytical framework informing the study. By doing so, it seeks to link the framework to the theoretical approaches, and discuss some of the key concepts.

2.1   Positioning forests within environmental governance

Environmental governance is an interdisciplinary and integrated approach that encompasses relations to nature, spanning institutions and policies in fields such as land use, biodiversity loss, climate change and pollution (Evans 2012; Vatn 2015). Studies in the field of environmental governance essentially focus on human actions in the physical environment, including resources. Forest use and management represent an important aspect of environmental governance. Discussions about forest governance have often focused on the development of the 'right tools' to achieve sustainable forest management (Davis et al. 2013). Over the years, politicians and scientists have been discussing many technical and institutional solutions to the degradation of natural resources, including forests. Each of these solutions can be placed somewhere between two extremes: on one hand, of restrictive ecological views embracing 'fines and fences'; and, on another, of more open views focusing on integrated conservation and development, and recent commodification of environmental services. The choice between the restrictive, integrative and commodification approaches to fighting natural resource degradation represents different discourses within the global debate (Adger et al. 2001).

Governance is about shaping social priorities by formulating goals or protecting certain interests, and realising these goals or interests (Vatn 2015). It is a collective effort to decide and agree on particular goals and to subsequently steer society towards such a goal, by shaping social values and actions through policies (Vallejo & Hauselmann 2004; Vatn & Vedeld 2011). Governance can therefore be decentralised and open to self-organisation and self-regulation (Biermann et al. 2009; Rosenau 1995; Young 2000), as well as to conventional government-driven policy-making. The governance perspective to environmental issues acknowledges that the government should share some of its power and responsibilities in the policy-making process with non-governmental actors (Biermann et al. 2009; Noor et al. 2010). Hence, governance can be said to be a 'multi-actor, multi-sector and multi-level' process, because it includes a variety of actors from different sectors in society who potentially hold different values, positions, interests, preferences and worldviews, and who interact at and across different administrative and geographical scales (Burger & Mayer 2003).

Environmental governance is, therefore, understood as a set of regulatory processes, mechanisms and organisations through which actors influence actions and outcomes to achieve particular environmental goals or interests, by changing environment-related incentives, knowledge, institutions and actions (Lemos & Agrawal 2006 p. 298). Environmental governance integrates actor–networks, rule-making systems and institutions operating at or across various scales of social organisations, in a continuing process of formulating and implementing environmental policies (Biermann et al. 2009; Noor et al. 2010). Environmental governance has been established to link the gap between decision makers (e.g. governments) and those implementing (e.g. NGOs) or being affected by such decisions, who are often absent from the decision-making process (e.g. local communities) (Hiraldo & Tanner 2011; Holmes & Scoones 2000). Environmental governance can take various forms at different scales, depending on which actors participate in the process and their political and economic relations (Biermann et al. 2012; Lemos & Agrawal 2006).

Forest governance as an aspect of environmental governance is defined as interventions that define and guide forest practices and interactions (Guéneau & Tozzi 2008). These practices are based on a set of beliefs, norms and formal rules (Wiersum 1995). Forest governance is a solution to resource degradation, as it creates an interdependent world involving different

responsible actors. Institutions are crucial in forest governance, since forest practices are strongly related to institutions, with practices entailing structuring patterns of behaviour. These patterns concern not only formal regulations, but also norms and cultural beliefs (Leach et al. 1999; Platteau 2000). Both the institutional approach and the political ecology approach are used to analyse human action on environmental resources such as forests, including forest governance and REDD+ interventions at the local level. These approaches are discussed in the next section.

2.2   Institutional approach in environmental governance

The concept of an institution has several interpretations, and agreeing on a common definition is difficult. The term is often used in a casual manner and can, therefore, refer to a great variety of things. Sometimes the term is used as synonym to that of an organisation. It can be, however, problematic to equate organisations and institutions. Organisations are actors and this conceptualisation creates difficulties for making distinctions between actors and structures. Rather, one may see organisations as representing groups of people with a common purpose to achieve goals. Institutions create the framework upon which these organisations are based (Fabricius 2004; Leach et al. 1999; Ostrom 2006).

This thesis applies an understanding of institutions as 'rules'. However, important differences exist even among those supporting such a definition, as one may distinguished between a rational choice and a constructivist choice based on an understanding of institutions 'as rules' (Vatn 2015). These two positions are based on a different understanding of the relationship between institutions and human action.

Rational choice institutionalism — as developed among new institutional economists — conceptualises actors as having a fixed set of preferences and behaving in an instrumental way to maximise their utility. The actor is able to identify the best means to serve his/her own goals, since he/she can calculate their expected values, rank alternatives on that basis and chose the best option (Vatn 2005). Given the emphasis on stable and autonomous preferences, institutions can only operate as constraints on individual choices; for example, as defined property rights and systems for human interaction, such as markets. Each individual has a predefined ability to understand not only his/her own needs, but also the performance of others and the working of

the natural world. Institutions influence the context of choice, but play no role in forming the individual. Rational choice institutionalism is, in this sense, based on the core assumptions of neoclassical economics; for example, see Eggertsson's work (Eggertsson 1990) (North 1990).[4] Given institutions and the existing distribution of endowments, individuals transact to get what, in the end, is considered best for them. Since transacting is costly, institutions exist as a means to reduce transaction costs. They are instruments that make exchanges more predictable, simple and efficient (Bromley 2006; Vatn 2005).

This thesis follows the perspective of classical institutional economics, focusing on a construct-ivist understanding of the role of institutions. While there are different ways in which institutions are defined in this tradition too, they have in common that institutions influence the values, preferences and interests of the individual. Institutions play a role in creation. This perspective is captured by Vatn (2015, p. 78) when he states that institutions are 'the conventions, norms and formally sanctioned rules of a society. They provide expectation, stability and meaning essential to human existence and coordination. Institutions regularize life, support certain values and protect and produce interests'.[5] This definition captures the duality of interactions between coordination and cooperation, and conflicts as observed in environmental governance. It clearly describes the form and what institutions do. In terms of form, it distinguishes between formal institutions with formally sanctioned rules and informal institutions, such as conventions and norms. In terms of what they do, institutions create order by facilitating coordination — for example, through conventions — and equally protect certain interests and values by taking sides in conflicts using formal rules and norms (Vatn 2015).

The relationship between the definition of an institution and understanding behaviour is very different from the position taken by new institutional economists. The classical position emphasises that institutions are not only constraints; rather, they form the individual through the internalisation of conventions and norms, and help create meaning, hence influencing

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[4] It is notable that (North 2005) explicitly distances himself from the neoclassical assumption of rational choice. He does, however, still maintain the perspective that institutions operate only as constraints.

[5] It is notable that Vatn here draws on definitions from fields outside institutional economics; for example, sociologists such as Berger and Luckmann (1967) and Scott (1995). This illustrates that while the position of classical institutional economics has its history back to 'American institutionalism' (e.g. Veblen and Commons), its modern form also draws heavily on sociology and the theory of organisations.

purpose (Bromley 2006). Moreover, through developing institutions, individuals influence who they become (Bromley 2006; Vatn 2005).

Constructivist-based institutionalism includes many positions outside those of classical institutional economics (see Vatn 2015). The most prominent perspectives may be termed sociological institutionalism, historical institutionalism and the more recent critical institutional perspective. This thesis specifically draws on classical institutional economics and the critical institutional perspective. The classical institutional economics perspective has a complex history and greatly contrasts with the neoclassical theoretical core and its assumptions. Veblen (Economics) and Durkheim (Sociology) were the first scholars to develop the theoretical thinking of this tradition (Vatn 2004; Vatn 2005). They viewed institutions as forming the basis for human action and interaction. Polyani (1944) and his formulation of "substantivism" greatly contributed to classical institutionalism.

Polanyi's work could be seen as the first elaborated link between anthropology and economics (Diaw 2005; Gerber & Veuthey 2006). He argues that no abstract formal principle can universally explain economic behaviour. According to him, the study of the 'changing place of the economy' in society requires an examination of its 'substantive meaning' and its historical, empirically observable characteristics (Diaw 2005). According to this tradition, both the social capabilities of the individual and how they see the world are socially constructed. Individuals, as social beings, are constituted through learning the typification of both the material world and social relations as established by the society. They learn the meanings already created by the society in which they are raised. Society itself is likewise perceived through the concepts that are collectively produced (Berger & Luckmann 1967). Institutions, in this sense, enable people to act by defining which act should be done in specific situations. In this case, our preferences are influenced by the roles we perform and positions we have. We do what is expected and the institutional context defines what is rational or what is reasonable to do (Vatn 2005).

Classical institutional economics hence looks at institutions as something more than external constraints (Berger & Luckmann 1967; Bromley 1989; Bromley 2006; Scott 1995; Vatn 2005; Veblen 1919). According to these scholars, institutions have a formative influence on individuals. Institutions are both external rules and structures that are shaping the individual. They influence perceptions of what is (cognitive aspects) and what should be (the normative

aspects) (Vatn 2005). What is rational is not just a result of an individual calculation given external institutional constraints. Institutions influence what we observe, which values we find right to defend, and which preference we hold. Rational choices are not only about what is optimal for the individual, but are also about what is right to do in a certain situation or institutional context (Vatn 2005). So, there is a fundamental connection between the theory of individual choice and the understanding of what institutions are and do.

According to this tradition, there is, therefore, a two-way interaction between the individual and institutions. Individuals produce institutions, and, at the same time, these constructions influence what individuals become. In a complex world, for example, societies use institutions to create necessary order and social cohesion. As individuals become socialised into an institutional structure, individuals also internalise the values and logic upon which such structures are based. The institutional view of this tradition emphasises the role both of choice/agent and of structures (Vatn 2005). The most important choices are those defining which institutional structures should exist to provide the context and rules for a specific area of decisions. The choice of institution defines the rationality of the arena within which sub choices like specific resource allocations are then to be made.

The theoretical emphasis of this tradition is that institutions are crucial for supporting individual human choices, and it is impossible for the individual to act rationally without the support of institutions. This idea of social rationality brings in the issue of communication and dialogue. Communication or dialogue, in this context, is all about reasoning together over which decision is best, and developing and testing arguments concerning which norms, preference or behavioural rules should be supported in the defined social settings (Vatn 2005).

Turning to critical institutionalism, a focus is observed on dynamics of institutional change in which the key concept is institutional bricolage. This approach has been developed in the field of natural resource management by Frances Cleaver (2012). Similar to classical institutional economics, institutions are not only seen as constraining, but also as enabling human agency. Institutions provide boundaries that actors, in turn, reshape (Bromley 2006; Cleaver 2002). Institutional bricolage means constructing and borrowing disparate existing institutional elements in order to create different frameworks for decisions and practices (Cleaver 2001a). The approach draws upon the work of Giddens, Long, and Douglas to explain the relation

between agency and structure (Giddens 1984; Long 2003), and the role of institutions in shaping human perceptions (Douglas 1986). Giddens' contribution to the structure–agency debate tries to avoid a determining role of either agents or structures. He argues for a duality of structure that implies that social structure enables, but also limits, human action and that human action creates these structures. In this view, the actor has an active role in the formation of institutions, as he has an agency that can reinforce structure or even break away from it (Giddens 1984). In a more comparable view, Long (2003) examines interfaces as kinds of encounters between actors and structures, in which the actors' goals, perceptions, interests and values are reshaped or reinforced. Douglas (1986), on the other hand, focuses on the influence of culture on institutional construction and rejects the idea of rationality as the leading principle in founding common ideas within groups of people. She argues that close interrelationships of kinship and reciprocity play a more important role in institutional construction. In addition, she states that institutions are often metaphorically connected. This allows for the transfer of meaning from one institution to another, along the formal similarities that they possess.

Institutional bricolage "suggest(s) how mechanisms for resource management and collective action are borrowed or constructed from existing institutions, styles of thinking and sanctioned relationships" (Cleaver 2002 p. 16). Unlike institutional crafting that gives overriding influence on institutions as assets and determinants of rational human actions, institutional bricolage recognises resource users "as conscious and unconscious social agents, deeply embedded in their cultural milieu but nonetheless capable of analysing and acting upon the circumstances that confront them" (Cleaver 2002 p. 16). In this manner, institutions are proactive in realising the interests of resource users without simultaneously inducing depletion of the resource(s) in question. This institutional perspective has been employed in this study (see Paper 3) to understand how actors deal with overlapping and competing institutional structures to have access to forest resources in Équateur province.

The critical institutional perspective emerged as a critique to the new institutional economics perspective. According to the critical institutional approach, the understanding of new institutionalism does not fill the gap between theories and current realities. The new institutional economics perspective neglects the many everyday contexts in which institutions are located, and the roots they have in local history and society. New institutionalism tends to

promote a rather homogenous view of the community in which local differences, power, and politics are downplayed. These views often neglect the local specific situation in which power inequalities, gender issues, and resource users' diverse interests occur. Although great faith is placed on institutions in coordinating collective action, they can also reproduce conflict and further widen social division and inequalities (Cleaver & Franks 2005; Leach et al. 1999). Finally, the new institutional economics perspective undermines the interaction between formal and informal institutions and does not acknowledge the rather messy overlap of institutional domains that may result in ambiguous institutions (e.g. legal pluralism). The critical institutional approach is aimed at filling these gaps by including approaches from anthropology, historical institutionalism and sociological institutionalism to understand and analyse issues such as legal pluralism and uncertainties in natural resource management (Cleaver & Franks 2005; Leach et al. 1999).

While the classical and critical institutional perspectives conceptualise institutions from a constructive-based understanding, there are some differences between the perspectives. Comparatively, classical institutionalists seem more interested in analysing a wide variety of institutional structures in relation to their efficiency, effectiveness, power relations and the protection of interests (Vatn 2015). In analysing power, classical institutionalists focus explicitly on the structural view of power. Institutions are understood as structuralised forms of power that empower and sanction, as well as create structures of domination.

On the other hand, the critical institutional perspective brings forward an understanding of institutions as more fluid, drawing on insights from anthropology. Here, institutions are perceived as human–nature interactions or rules and social arrangements in which behaviour and practices gain legitimacy and are produced through a process of institutional bricolage (Cleaver & De Koning 2015; Hall et al. 2014). The critical institutional perspective focuses explicitly on human agency by offering deep understandings of the ways in which actors shape institutions and, in turn, are shaped by them. It emphasises the embeddedness of human agency and conceptualises agency as both as conscious and unconscious acts. The critical institutional perspective focuses on the agent view of power as the capacity to deploy or transform material and non-material resources (see Giddens 1984). A key element is the logics of practices in understanding how people operate in relation to institutions (Liebrand 2015). This logic of

practice is in conformity with Bourdieu (1977), who articulated that a logic of practice is complex and situated, and is partially conscious and partially unconscious (cited in Liebrand 2015). This implies that practical arrangements for managing resources are filled with wider social significance and can be traced back to the generative principles of the social field (Bourdieu 1977). Hence, agency is embedded in routinised practices, and may not be conscious. Understanding people's actions and the ways these affect institutions goes beyond tracking practices and social relationships (Cleaver & De Koning 2015).

2.3   Political ecology approach in environmental governance

The key element in the approach of political ecology being relevant for this study in environmental governance is the power-centered approach, which often emerges as a central analytical concept in this tradition (Bryant & Bailey 1997; Bryant 1998). The power element is also part of the institutional approach, but is embedded in structures, rather than actors. This perspective has often been critiqued as it does not adequately consider agency, interests and the practice of actors in the crafting of institutions (Ribot 2006). This critique, however, concerns the new institutionalism approach, as it does not contradict the approach of classical institutionalism that understand power as embedded in institutions, and institutions as important in forming power relations and distribution (Vatn 2015). Although power and institutions are intrinsically linked, it is necessary to understand how power is distributed and how political and financial interests privilege certain actors' decisions within a particular set of policy-making processes before analysing a set of institutions (Ribot et al. 2006). Considering political–economic context and processes is thus essential to understanding why central political actors are not willing to give up power to other actors in decentralised forest governance (Agrawal & Ostrom 2001; Ribot et al. 2006).

Power is a key concept in political ecology in explaining environmental change. Power and its subsidiary uses — power resources, power relations, bundles of power, authoritative resources or action resources (see Benjaminsen & Svarstad 2010; Cleaver 2002; Pandolfelli et al. 2007; Ribot & Peluso 2003) — is very difficult to define. Power has been conceptualised and used differently in social sciences, because it is an integral part of social reality (Rogers 1974). The concept has been used in this study to understand how decisions regarding forest use and management are made and put into practice. While the concept has been conceptualised

differently, it has been typically defined as the ability to act and as a relationship between actors (Dahl 1957; Rogers 1974). This thesis draws on the conceptualisation of power as articulated by Lukes (2005), since the study focuses at the local level on analysing the processes and outcomes of policies on forest use and management.

Lukes (2005), conceptualised power into three dimensions. The *one*-dimensional view to power focuses on the study of observable behaviour in decision-making on issues about which there is a direct actual or observable conflict. This is a more pluralist approach to power, in which contests over interests are assumed visible in public spaces that, in turn, are presumed to be relatively open (Lukes 2005; Raik et al. 2008). This view of power is well articulated by Dahl (1957) in his study of observable behaviour in conflicts in organisations and political structures. This view of power in decision-making is common in forest governance and REDD+ implementation, in which the intention is to understand the '*who*, *how* and *what*' of the decision-making process to empower the less powerful (Cromberg et al. 2014; Lawlor et al. 2013; Raik et al. 2008). The one-dimensional view limits power to concrete decisions and takes no account of the fact that power may be exercised by confining the scope of decision-making to relatively safe or observable issues (see Raik et al. 2008; Vatn 2015).

This continues to the *two*-dimensional view of power which, argues that power should also include non-decision making (see Bachrach & Baratz 1970). Lukes (2005 p. 22) articulated that although the two-dimensional view pays attention to issues that are left out from the decision-making process by actors, the power to suppress certain issues is still seen as a form of decision-making. The second dimension of power is often perceived in natural resource management when certain powerful actors maintain their influence by controlling who gets to the decision-making arena and what gets on the agenda through a prevailing 'mobilization of bias' or rules of the game (Raik et al. 2008). Many studies have documented this second dimension of power in natural resource governance, in which powerful actors use a certain repertoire of domination in controlling and shaping the decision-making arena. Hence, the conflict is covert (Aguilar-Støen 2015; Brockhaus et al. 2014; Gaventa 2006).

Lukes (2005 p. 23), however, claims that both views of power are inadequate, as they only study actual, observable *conflict*. Just as the pluralists hold that power in decision-making only shows up where there is conflict, the two-dimensional view also assumes the same to be true in

cases of non-decision making (Lukes 2005). Lukes (2005) argues that we need to think about power in a broader context, and not only in situations with observable (overt or covert) conflict. As an alternative, he proposes a *three*-dimensional view of power emphasising that the most effective form of power is to prevent such conflict from arising in the first place by shaping peoples' perceptions and interests (Lukes 2005 p. 27). This form of power is exercised in many ways, for instance through control of information or socialisation. The three-dimensional view of power argues that important issues are not only kept from the decision-making arena, but also from the minds and consciousness of the different actors involved in the decision-making, even those directly affected by the problem or issue. This view of power shapes people's beliefs, sense of self and acceptance of the '*status quo'* through processes of socialisation, culture and ideology, by defining what is normal, acceptable and safe (Haugaard 1997; Scott 1995). The third dimension of power goes beyond the observable essences of power as coercion and constraint in that it accounts for social processes, which shape how interests themselves are defined (Haugaard 1997; Raik et al. 2008). The third dimension is a radical view of power as 'false consciousness' — a way in which power is working in unconscious ways, and affecting people's values through processes of internalisation (Haugaard 1997; Lukes 2005; Scott 1995). Gaventa (1982) used this third dimension of power in his study of mining communities in an Appalachian Valley, where he argued that quiescence of the dominated community could be attributed to power relations and, specifically, the influence of consciousness created by information control and socialisation, as well as indirect means, such as anticipated defeat.

This socially constructed power is prominent in environmental governance and forms a key element of this study. Many policy interventions that encouraged or promoted local participation in the management of natural resources have reproduced, and even aggravated, pre-existing social differentiations both within a community and between local people and external actors (Agrawal & Gibson 1999; Cooke & Kothari 2001). This is because these interventions are never situated in the broader context of people's social life. For example, in decentralising forest management, many donors, governments, and NGOs support the transfer of management from the forest agency to a local forest-user association created for this purpose. Such externally motivated social structures often result in institutionalising power asymmetries. This is because an externally motivated organisational structure does not account for the characteristic of the actors arenas, how power and authority are distributed among people, how

groups exercise agency and local heterogeneity (Vedeld 2002). In the context of this thesis, these dimensions of power have been emphasised to assess the relations of power that influenced and shaped local participation in forestry interventions and REDD+ implementation.

It is important to highlight here that Lukes' (2005) third dimension of power reflects very much the conceptualisation of power proposed by Foucault that is prominent in political ecology analytical approaches. Power is not held by a centralised or identifiable unit, but is distributed among the society and expressed by the multiple micro-practices of a myriad of actors (Foucault 1976). In this perspective, discourses are both an expression and instrument of power and knowledge, which continuously transforms the society: "*C'est dans le discours que pouvoir et savoir viennent s'articuler*"[6] (Foucault 1976 p. 133). Undeniably, institutions and power are closely interrelated because institutions directly affect power distribution. For Searle (2005), it is actually a major purpose of institutional change: 'the essential role of human institutions and the purpose of having institutions is not to constrain people as such, but, rather, to create new sorts of power relationships' (Searle 2005 p. 10).

This intrinsic relationship between power and institutions is clearly articulated by Giddens (1984 p. 14) as he defined power, "both as transformative capacity (the characteristic view held by those treating power in terms of the conduct of agents), and as domination (the main focus of those concentrating upon power as a structural quality)." The transformative capacity refers to the power of an individual to intervene causally in a series of events, in which all actions depend on exercising power. The action depends on the capability of the individual to 'make a difference' to a pre-existing state of affairs or course of events (Giddens 1984). Domination refers to the institutional structures in which power is embedded, such as property rights, and which Giddens (1984) called social rules. He introduces the notion of 'the duality of structure' to indicate that structures, as rules and resources, are both the precondition and the unintended outcome of human agency. People are free to act, but draw upon and replicate structures of power through their own actions (Giddens 1984). His contribution to the structure–agency debate tries to avoid the determining role of either agents or structures. In this view, the actor has an active role in the formation of institutions, as he has an agency that can reinforce structure or even break away from it (Giddens 1984). This duality of structure and agency is essential in

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[6] The discourse that power and knowledge articulate translated in English

understanding power, as some authors emphasise the role of agency as the basis for power relations, while others emphasise institutional structures. His definition of power as integrated into the institutions of society is central to this study, in the sense that power is embedded in the formal rules and norms in society. While these rules and norms are created by humans, at the same time, they structure or shape human action and even form humans (Vatn 2015).

The power-centered approach is influential to this study, because it traces the unequal local political, economic or social relationships occurring at different geographical scales — including local, regional, national and international political–economic structures. In addition, the approach seeks to understand local perceptions, knowledge and practices of forest use and management through empirical research. It analyses communities as a heterogeneous entity characterised by social structures (class, gender, ethnicity), social relations and local power struggles over natural resources within and between communities — and state actors in situations of uncertainty — highlighting the gap between official rules and actual practices. Such analysis has constantly revealed that the devolution of formal rights to manage forests and land for local communities is not sufficient if structural and relational mechanisms of access prevent communities from deriving benefits from these rights (Cleaver 2012; Meinzen-Dick & Pradhan 2002; Ribot & Peluso 2003; Sikor & Lund 2009).

2.4   Environmental governance framework

Thus far, the role of actors and institutions in (environmental) governance has been emphasised. Understanding structures and processes regarding environmental governance also demands emphasis on the attributes and dynamics of the natural resource system in question, as well as the technologies and infrastructure involved in defining physical spaces for human action (Vatn 2011). Implementing REDD+ at the national and local level requires changing or modifying existing regimes that govern access to, and use of, forests and forest resources (Phelps et al. 2010; Vatn et al. 2009). Changing or modifying existing regimes to fit the biophysical and social conditions (Young 2008) — given the varieties of resources, institutions, actors and their modes of interactions — is quite challenging and entails tremendous coordination efforts (Vatn et al. 2009).

This study therefore makes use of the environmental governance framework rooted in institutional theories and analysis to assess the processes and outcomes of policy interventions in regulating forest use and management. Apart from analysing power relations and distribution, the framework allows for the design, identification and understanding of rules, norms and practice that enable actors to gain, legitimise and exercise power. The possibility of improving outcomes by acting upon rules and norms facilitates the development of policy recommendations (Ostrom 2005). One of the core assumptions of this analytical framework is that actors' behaviour (conscious acts) can be modified by changing the incentives and constraints they face (Ostrom 2005). This could be limited if the logic of practice and human agency are not taken into consideration (Cleaver & De Koning 2015). Focusing this study along an institutional perspective aims to overcome one of the recognised limitations of a political ecology approach, which is formulating policy recommendations (Neumann, 2005).

To understand and analyse forest governance and REDD+ implementation in Équateur province, this thesis therefore employs an adapted version of the environmental governance framework developed by Vatn (Vatn 2011, 2015). This framework is inspired by the work of Ostrom et al. (1994) and their Institutional Analysis and Development (IAD) framework. It is based on institutional theory and emphasises the important role of institutions in environmental governance (Vatn 2005). The framework distinguishes six key factors when studying or analysing forest governance and REDD+, and has been adapted for the purposes of this thesis to distinguish eight key factors: (1) The physical attributes of the forests; (2) the availability of technologies/infrastructures; (3) the economic actors with their socio–economic characteristics; (4) the political actors and their characteristics; (5) the institutional arrangements (resource regime) that governs forest use; (6) the institutions governing political processes; (7) the socio–economic characteristics of the community; and (8) outcomes and evaluations affecting future policies and the resource itself (see Figure 1). This thesis also draws on the sustainable livelihood framework (Paper 2) to assess how livelihood assets or capitals (natural, financial, human and social capital) are combined to form particular livelihood strategies and outcomes (Ellis 2000; Scoones 1998).
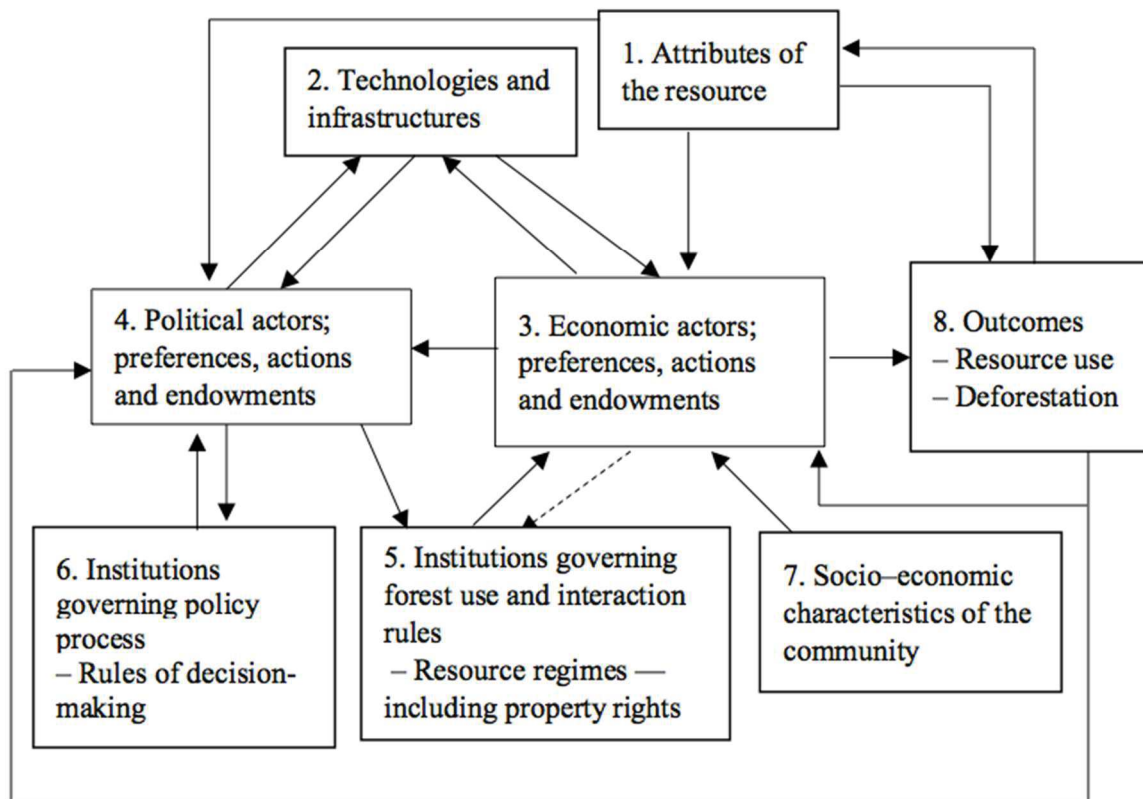
Key: *The bold arrows indicate strong interaction while the dash arrow indicates weak interaction.*

Figure 1 Environmental governance framework for analysing resource-use problems
(adapted from Vatn, 2011)

The physical attributes of the resource (1) — such as its physical properties, levels of scarcity, size of the resource system and the natural boundaries of the resource — influence actors' motivations and how the resource can, or should, be used and managed. Resources have different properties; some are restricted in one location (e.g. water and forests), while others are dynamic in nature (e.g. fish and wildlife). On the other hand, the forest is a renewable resource that can regenerate over time if not fully depleted. The forest is equally diverse, considering its carbon sequestration abilities, environmental services, reproduction rates and home for biodiversity. In this context, the forest is a typical example of common pool resources, for which there is exclusion and rivalry in consumption (Ostrom et al. 1994; Vedeld 2002). The physical attributes of the resource are crucial and are linked to Young 's (2008) concept of 'Fit', with which he argues that if there is no congruence between the existing institutional arrangements and the attributes of natural resources, the resource regime will most likely fail

(see also Vatn & Vedeld 2012). While this may have strong implications in some resource systems, such as fisheries, in our case of the forest, actions are often related to perceptions about the resource attributes and the interests that are emphasised (Vatn 2015).

Turning to technology and infrastructures (2), the role can be exemplified by the construction of roads in the forest (e.g. with commercial timber exploitation). This changes the decision environment for people by opening up the forest to other land use activities (shifting cultivation, charcoal production, and hunting). So, infrastructures may make some resources more accessible and/or introduce technologies — such as a chainsaw — to improve efficiency, creating more pressure on the forests. The introduction of other technologies might reduce such pressures. For example, the introduction of energy-saving stoves, solar panels or electricity in an area might reduce the need for firewood with cooking.

The framework emphasises the role of actors operating in institutional, social, environmental ant technological contexts. The actors are the individuals, social groups and organisations involved in the use and management of the forests. They are characterised by their endowment, preferences, motivation and capacity. Actors may be grouped in two categories — political and economic — noting that actors sometimes 'move between' the two positions. Economic actors (3) regard those who use resources, including local farmers, loggers and also the state, as forest owners who, through concessions, can obtain revenue and civil servants who can obtain income from bribes. The political actors (4) define and enforce rules of use and control of forest resources. They include politicians, government agencies involved in forest management and traditional authorities. This analysis includes two types of political actors — state authorities and traditional authorities. The power of state authorities are enshrined in the Constitution, and laws or gubernatorial decrees, while the power of traditional authorities are based on customary laws — rules sanctioned by local customs and traditions negotiated and renegotiated over time and space (Agbosu 2000; Diaw 2005).

Economic actors may interact with political actors through exchange (the state and logging companies or traditional authorities and local loggers), through command (state and individuals/communities) granting formal property rights, or by following local/customary rules (Vatn 2011).

The institutional arrangements in the framework are also divided into two categories — the rules governing the economic process (property rights and interaction rules), and the rules governing the political process formulating such rights and interaction rules. The rules governing the economic process (5) are typically property rights. These rights are typically bundles of rights differentiated as user rights, control rights and alienation rights. User rights are typically access and withdrawal rights, as defined by Schlager and Ostrom (1992). Control rights are referred to as second order rights to determine use rights, and include management, exclusion, transaction, and monitoring rights (Sikor 2014). Alienation rights are the rights to rent, sell or transfer rights to others. In this thesis, property rights are understood as the control over a benefit stream, and the ability to call upon the collective to stand behind one's claim to this benefit stream (Bromley 1991: 15). In this context — and while property is a physical capital, such as a forest — if the owner has control over the benefit streams, a right is the capacity or ability to call upon the collective to stand behind one's claims to these streams (Bromley 1991). Therefore, property rights only apply with approval by a legitimate authority structure. The rights holders are conceptualised into three categories — state, community and individuals (Barry & Meinzen-Dick 2008; Larson et al. 2008).

The institutions governing the political process (6) include the Constitution, ministerial decrees and administrative texts, and customary rules. The political actors access their positions in different ways (Vatn 2011). In the case of traditional authorities, they access their positions through rules based on cultural processes linked to the inheritance of genealogical rights (Diaw 1997). In the case of political actors, they access their positions through either elections or political appointments. In the case study of this thesis, the latter is often based on patron–client relationships (Trefon 2011). As formal institutions are generally weak, patron–client relationships define who holds political positions. This is not least the case in the forestry sector (Debroux et al. 2007; Trefon 2010). The formal election is used as a mechanism for citizens to demand accountability from elected political actors. In the case study, most of these elected political actors are not accountable to citizens, but are accountable to the authority structures that have accorded them recognition (Oyono & Nzuzi 2006; Oyono & Ntungila-Nkama 2015). Elections are often used as a mechanism to renew their mandates, as the citizens often lack full information and other power resources to hold them accountable (Samndong 2015; Trefon 2010).

The motivations that drive the actions of economic actors are also influenced by the socio–economic characteristics of the communities (7). This refers to issues such as ethnicity, proximity to the resource base, market access and social networks influencing economic actors' decisions to convert the forest to other land use activities. Determining why an actor chooses a specific option requires an analysis of the socio–cultural context, which may reveal important relationships and practices that interplay with economic motives (Cleuren 2001).

Finally, outcome (8) regards the current state of the resource and resource use and the physical attributes of the resource. The expected outcome might also affect actors' motivations when deciding. For instance, an actor who is not satisfied with the observed outcomes might influence the process of making the collective choice rules to fit their own interest. In the case of forest governance, an expected outcome, such as deforestation or sustainable forest management, largely depends on the political and institutional structures and fitness to the characteristics of the resource and the interests and values of the actors. The resource regime may fit well with the dynamics of the forest resource, but may have limited effect if actors are motivated to manipulate the rules (rule breaking, corruptions, illegality, and patronage). Such actions may require changing institutional structures.

While most of the literature on the evaluation of policy instruments — including REDD+ — is focused on the 3E criteria (effectiveness, efficiency and equity) in assessing policy measures and instruments (Angelsen 2008), Vatn (2011; 2015) argues that a wider focus on legitimacy is needed. Building on Bäckstrand (2006), he emphasises that evaluation should be both on process — that is, input legitimacy — and output legitimacy, meaning the legitimacy of outcomes where one may use the 3E criterion. The input or legitimacy of the process relates to procedural elements in decision-making processes, and includes issues such as representation, transparency, accountability and the distribution of power and resources. The output legitimacy refers to the problem-solving capacity of the governance structure. The focus here is on the consequences: the effectiveness, efficiency and equity of the governance structure (Vatn et al. 2011). This thesis focuses on the input legitimacy of REDD+ implementation in Équateur province, since it is still early to assess the impact of the project. The main concept that is assessed about input legitimacy is participation, with how it was operationalised discussed in the analysis.

2.4.1 Access as a function of power

From this framework, the authority structures that define the bundle of rights that specify property are crucial in the sense of legitimising or enforcing these rights in practice. This leads to the importance of power and power resources in accessing and benefiting from forest resources that transcend property rights and power as a legitimising authority (Sikor & Lund 2009). Power and recognition are important issues in analysing REDD+ regimes and necessary institutional changes. More importantly, implementing REDD+ at the local level requires the transfer of power and resources to local authorities to enable them to act or respond to local needs and aspirations (Ribot 2004). The kind of power a resource confers via recognition and the ability of the local population to scrutinise and exercise power is very crucial in resource use (Ribot et al. 2008). Access as a function of power is crucial in defining and shaping local access and control over forests, especially in a context of legal pluralism.

Access transcends property in that it is the actual ability of actors to benefit from the resources at stake that is important (Ribot & Peluso 2003). In forest governance, particularly in the context of legal pluralism — such as with this case study — some actors and institutions have the power to control the access to forests, while others have to maintain them through those who have control. While access *control* involves the power to mediate others' access, access *maintenance* requires power to keep the access to the resources (Ribot & Peluso 2003). Access is more akin to a bundle of powers than a bundle of rights (Sikor & Lund 2009). Communities, such as those affected by or involved in forestry interventions such as REDD+, are not static, rule-bound entities, but consist of actors who actively observe, interpret and shape the world around them (Leach et al. 1999). They may strategically draw from their bundles of powers to promote their interests in claiming, controlling and maintaining access to given resources. The strands in the bundles of powers are conditioned by the resources at the actors' disposal, including knowledge, authority, social identities and social relations (Ribot & Peluso 2003). They constitute various intermingled constellations of rights-based and other means and processes to gain and maintain benefit streams, with varying bases of legitimacy (Sikor & Lund 2009). In a situation in which different types of rules are recognised to varying degrees by different actors — institutional pluralism — illegal access is not easily pitted against rights-based access as the polar opposite (Ribot & Peluso 2003 p. 164), but rather needs to be carefully defined in each

context. In this context, statutory or customary law do not sanction and encompass all forms of possession: it is equally important that economic actors gain and maintain access to resources in many ways that do not amount to property (Leach et al. 1999; Ribot & Peluso 2003). This often occurs in situations in which the property rights structure is weakened or broken. Actors apply a variety of access mechanisms to gain or maintain access to resources and benefits. In addition to property, these resources and benefits include technology, capital, markets, labour, knowledge, identities and social relations (Ribot & Peluso 2003 p. 159–160). Hence, economic actors may derive benefits from resources without holding property rights to them (Sikor and Lund 2009). These mechanisms of access are considered the bundles of power that enable these actors to maintain their access to resources. These bundles of power are different from the bundles of rights, and may shift over time and change forms of access (Ribot & Peluso 2003 p.154). In the Équateur province, it is common for some economic actors, such as customary landowners, to hold property rights to forests without having the capacity to derive any material benefit from them, while other economic actors, such as charcoal merchants and artisanal loggers, are able to employ their forms to access mechanisms to derive benefits from the forest without holding property rights.

In addition, in the context of institutional pluralism — especially when there are competing authority structures that enforce claims to forests — actors draw of their bundle of powers to patronise the different authority structures, depending on the situation, as the basis of their claims to a resource. This process is known as 'forum shopping' (Meinzen-Dick & Pradhan 2002; von Benda-Beckmann et al. 2006). This implies that the actors and institutions possessing access control may also have the power to *exclude* others from accessing the benefits. This distinction may be useful to analyse the type of exclusion mechanisms that could emerge from the REDD+ process. The authority that enforces claims are accorded legitimate power from the institutional structure(s) that authorise or acknowledge the claims (Weber 1978). However, what is legitimate varies between and within cultures and over time, and is continuously re-established through conflict and negotiation (Sikor & Lund 2009 p. 7). In the context of legal pluralism, competing actors and institutions may operate to legitimise different forms of claims to property; however, different, competing legitimacies (powers) are at play in such a situations (Sikor & Lund 2009). In the analysis of this thesis, this process of legal pluralism and forum

shopping the forest governance in Équateur province and the implications of REDD+ implementation are examined.

2.4.2 Gendered access, agency, inequality and ethnicity

The socio–economic characteristics of communities and households are crucial when investigating the effects of human agency on forest governance processes and outcomes at the local level. This study pays attention to the various strategies through which the bundles of powers may be operationalised in struggles for access, such as negotiation, bargaining, coercion — including discursive means — and sometimes more hidden ways of action, such as non-cooperation or non-compliance (Gaventa 1982; Lukes 2005; Ribot & Peluso 2003; Scott 1985). A central observation of the thesis is concerned with equity and gendered access, and how these interventions are usually shaped by largely unequal conditions for different actors to promote their interests regarding resources. Differences in the bundles of powers that different actors possess are always likely — conditioned not only by the structures and relations between rural communities and 'outsiders' that are often perceived to be more powerful (e.g. the state, Scott 1985), but also relations within the communities. A growing number of studies looking into local natural resource management within communities have shown that these communities are not homogenous, as seen from the outside. They are characterised by different sub-groups and institutions, and then individuals within these subgroups with varying motivations, preferences and power resources in access to and use of resources (Agrawal & Gibson 1999; Blaikie & Springate-Baginski 2007; Jones 2006; Mohan & Stokke 2000). Communities are composed of attributes of social identity that may have significant implications for access; including, for instance, age, gender, ethnicity, religion, status, caste, and profession (Agarwal 2010b; Ribot & Peluso 2003).

Studies of the processes and outcomes of natural resource governance at the sub-community level have commonly focused on households as the unit of analysis. A conventional conception of a household depicts it as a social unit which, in addition to consisting of individuals who usually reside under the same roof and share meals, act in concert to decide over resource allocation and income pooling (Ellis 2000). The conception that households are homogenous sites of particularly intense social and economic interactions and interdependencies between members does not always fully match the local reality (Bruce 1989; Ellis 2000; Whitehead &

Tsikata 2003; Yngstrom 2002). In most communities in the Congo Basin, kinship ties are more important than co-habitance, with family members frequently residing elsewhere but remitting important contributions to the household. Families are extended to the broader kinship ties of particular clans, which also define and shape local access to land. Reciprocity norms embedded in friendship, religious affiliations and other ties within communities may be more important to some actors than family ties (Ellis 2000).

A significant body of literature has equally documented the role of gender for access to land and other resources, especially in terms of how actors' gender affects struggles for access in the everyday practices of resource management (Ingram et al. 2014; Meinzen-Dick et al. 1997; Mwangi et al. 2011; Rocheleau & Edmunds 1997; Sunderland et al. 2014). This literatures argues that the mainstream conception of households as units of economic decisions subordinates women to the decisions of 'household heads' — usually men — in matters of resource use and allocation (Rocheleau & Edmunds 1997).

Gender is used in this context to refer to the "socially determined ideas and practices of what it is to be female or male" (Pandolfelli et al. 2007: 5). These ideas and practices are sanctioned and reinforced by a host of institutional structures (Agarwal 1997; Elmhirst 2011; Pandolfelli et al. 2007). While gender roles vary among cultures and over time, and are crosscut by a multitude of identities (e.g. ethnicity and class), the gender division of labour usually finds men and women relegated, respectively, to the public and private spheres (Agarwal 2001; Kabeer 1994; Quisumbing 2003). The unitary view of the household suggests that in the gender division of labour, women's and men's roles and responsibilities are separate but complement one another. This conception does not reflect local realities, as both men and women differ significantly in their motivations, preferences, knowledge, and access to forests (FAO 2013; Pandolfelli et al. 2007; Ragasa et al. 2012). For instance, the social embeddedness of women's land access in the Congo Basin may work either to weaken or to strengthen gendered land claims, depending on the context and the dynamic bundles of powers that condition actors' agency (Peach Brown 2011; Stiem & Krause 2016). In some cases, formal land titling processes have weakened women's access as their claims have been bypassed to the advantage of male household heads or other powerful local actors (Lastarria-Cornhiel 1997). These processes are conditioned by local institutions that privilege men over women within kinship systems that

function as the primary organising order for land access in some customary systems (Ragasa et al. 2012; Stiem 2014). At the same time, the same systems provide women with diverse, complementary or alternative means to access land through marriage or other social relations with men (Peach Brown 2011). However, depending on their asset endowment and bundle of powers, women may also access land through share cropping, renting and a wider circle of social ties (Mai et al. 2012; Meinzen-Dick et al. 1997).

Gender access to forests using conceptions of property does not often match local reality (Meinzen-Dick et al. 1997). Thus far, it has been shown that property rights involve complex relationships between different uses and users of resources, and can only be effective if users are recognised as legitimate, which requires an authority structure to enforce such rights. These rights, however, do not necessarily imply full ownership of a resource; instead, separate bundles of rights, as previously illustrated, are often found. For example, a woman may have access to a piece of land for firewood collection, but have no rights to plant trees on this land, as this latter activity is often reserved for those who have control rights over the land.

Many studies have also documented gendered exclusions in formal processes of forest governance in decentralised systems, and have found that women are mostly excluded in these processes, due to existing norms regarding local access to land and material resources, and their weak asset endowments (Agarwal 2001; Bandiaky-Badji 2011; Bandiaky & Tiani 2010). Other studies have documented how both the involvement of men and women in formal processes of forest governance have delivered more effective outcomes (Agarwal 2010a; Agrawal & Chhatre 2006; Mwangi et al. 2011).

Ethnicity is an important institution in understanding local access to land and forests in the Congo Basin region (Diaw 2005). Local rights and access to forests are often determined based on ethnic identity. This identity is linked to the customary tenure systems of land and forests, which are based on kinship and descent (Diaw 1997; Vlassenroot 2005). The DRC offer a fascinating example of understanding the complex dynamics between ethnicity and land rights and access. Under the customary tenure, also known as embedded tenure, the key principle of land appropriation — before colonisation — was based on first possession or occupancy, and the exercise of productive rights through labour investment. This principle enabled certain ethnic groups, such as the Bantu in the DRC, to establish a dominant possession of land and

productive rights due to their sedentary lifestyle and sense of social organisation compared to the Batwa (Pygmy) ethnic group, which had a mobility lifestyle and hunter-gatherer nature. The inability of the Batwa to establish rights to land due to their hunter-gatherer nature classified them as a minority ethnic group, and often as a tenant to land and forest (Lewis 2000). The co-existence between these two ethnic groups often represents a master–servant relationship. However, the failure of colonisation to eradicate the customary tenure system of land and forest created a situation of two types of citizenship in the DRC — ethnic citizenship and civil citizenship (Diaw 2005; Geschiere & Jackson 2006). This dual citizenship has created exclusion and conflicts over forest management and access to benefits at the local level in the DRC. While the 2006 Constitution spells out the principle of non-discrimination and equality of Congolese citizens in access to land and resources, these provisions have shown some serious contradiction with local realities (Gilbert 2013).

2.5   Conceptualising participation in environmental governance

Participation is a key concept in this thesis — being crucial in assessing forest governance processes and REDD+ implementation. The idea of participation emerged in the late 1960s when development theories were unable to address poverty and bring about transformational changes in the developing world. This led to a systematic search for alternative conceptual analyses and a shift in focus from economic growth to the social dimensions of development (Vedeld 2017). As a solution, participatory approaches were introduced to promote 'people-centered development', which emphasises that people should be the architects of their own futures (Burkey 1993; Chambers 1997), focusing on the role of social capital, capabilities, freedom and the ability of ordinary people to manage development themselves (Nussbaum 2000; Sen 1999). Within this view, participatory development enables the poor to influence, implement and control activities, which are essential to their development through interaction with agencies, officials and technical consultants (Burkey 1993). The emergence of participatory approaches to development underscores that grassroots support provides valuable insights into local conditions, facilitates the implementation of the planning process and improves development outcomes (Gupta et al. 2004).

This mainstream participatory approach was criticised as a legitimising device focusing on improving project effectiveness and reducing costs, rather than addressing structural inequality

and issues of social justice in society (Cleaver 1999; Cooke & Kothari 2001; Gaventa 2006; Osmani 2008). For these authors, participation should be aligned to the notion of citizenship, social justice and development as social change, rather than its use as a legitimising device to address problems of poverty and inequality. This emerging critic of the participatory discourse considered the vital importance of the relationship between participation and transformation in existing economic, social and political structures and strategies that encompassed 'organizational and institutional change' (Hoff & Stiglitz 2001).

From a governance perspective, participation is about democracy in a society regarding who decides what, when, where, how and why. It relates to the content and distribution of power, resources and influence in how social actors—through various organisational and institutional structures and political processes—engage in political, economic, socio–cultural or other social deliberations or decisions and implementations (Vedeld 2017). At a local scale, participation operates as self-empowerment; and rights-based development to a more instrumental approach to making local people do, accept or validate pre-conceived policy initiatives. This thesis focuses on gender and community participation in development, forestry interventions and REDD+ implementation in Équateur province. The first paper, however, links participation to the notion of citizenship, by assessing conditions that enable local people to exercise influence and demand accountability from local institutions and authorities recognised in development and forestry interventions (Gaventa 2002).

The key idea of participation, from a governance perspective, is inclusiveness — the inclusion of people in decision-making, formulating plans, controlling resources and implementing decisions over their own lives (Agarwal 2001). Based on this key idea, there has been increasing emphasis on community participation in all forms of development and conservation interventions, and now in REDD+ implementation. An important element in REDD+ are social safeguards emphasising the guarantee of 'full and effective participation' in REDD+ design and implementation at both national and sub-regional levels (UNFCCC 2010). Community participation in development and forestry interventions is now widely legitimised as an institutional imperative by governments, donor agencies and NGOs (Cornwall 2008; Penderis 2012). Central to the idea of inclusion is who to be included, as well as when and how to include.

These questions evoke the relations of power that are embedded within the organisational and institutional structures designed to enable community participation in these interventions.

Drawing from the central idea of inclusion and the underlying differences in state–society power relationships, participation is distinguished into two types — participation as a means, and participation as an end (Burkey 1993; Cooke & Kothari 2001; Kumar 2002; Nelson & Wright 1995; Oakley 1991; Vedeld 2017). Participation as a means implies the use of participation to achieve some pre-determined goals. It is a way of harnessing rural people's physical, economic and social resources to achieve the aims and objectives of development programmes and projects more efficiently, effectively or cheaply (Burkey 1993; Nelson & Wright 1995; Oakley 1991). Participation as an end is viewed as an active, dynamic and genuine process which unfolds over time, and whose purpose is to develop and strengthen the capabilities of rural people to intervene more directly in development initiatives (Cooke & Kothari 2001; Oakley 1991). As an end, participation is seen as a process of empowering and transforming individuals and communities in terms of acquiring skills, knowledge and experience, leading to greater self-reliance (Burkey 1993).

These views of participation at the local level are linked to both the effectiveness and empower-ment arguments in the participation discourses (Cleaver 1999). The effectiveness argument views participation as an instrument for more effectively achieving better project outcomes, and reducing costs after main decisions have been made by external actors. The empowerment argument, on the other hand, views participation as a process that enables the abilities and capabilities of individuals or groups to improve their own lives and facilitate social change to the advantage of marginalised groups (Cleaver 1999). These views of participation are neither clear-cut nor mutually exclusive (Cornwall 2008). They represent different purposes and approaches to promote participation in development interventions. While participation in itself is a process of empowering and facilitating social change, in practice, the effectiveness argument predominates many development interventions as coercive and manipulative tools cloaked in the rhetoric of empowerment (Cleaver 2001b). The effectiveness argument has gained preference, since most of these interventions or projects are designed from outside with a clearly defined set of activities, timeframes and budgets, quantifiable costs and benefits — with an emphasis on meeting practical needs rather than strategic needs — hence,

instrumentality rather than empowerment. The predetermine goal limits participants to influence the wider structural factors shaping the projects (Cleaver 1999; Cornwall 2008; Penderis 2012). Hence, people are included as users, choosers and passive consumers of predetermine values and interests, rather than makers and shapers of these values and interests (Cornwall & Gaventa 2000). The techniques and approaches of participation underlying the effectiveness argument disregard issues of power, control of information and other resources, and provide inadequate understanding of the determinant of social change (Cornwall & Coelho 2007; Hickey & Mohan 2004; Nelson & Wright 1995; White 1996).

An important dimension of both the effectiveness and empowerment arguments of participation is the complex relationship between human agency and social structures (Cleaver 1999; Cornwall 2003; Hickey & Mohan 2004; Penderis 2012). The effectiveness argument emphasises the individual or group, associating participatory approaches with the notion of rational choice — self-interest calculative behaviour and social beings. Norms control behaviour, while the social structure is a constraint (Cleaver 1999). The examination of the dynamic of power relations, the influence of external structures on collective action and the role of social capital in providing and reproducing inequality are given limited attention (Penderis 2012). In analysing the dynamics within structures, Bourdieu (1989 p. 16), notes that the construction of social reality by agents is determined by their perceived position in social space and hierarchical status, which are shaped by the economic, social, cultural and symbolic power they possess and the multiplicity of interactions in their personal life. Hence, the possession of different forms of power determines the form of social reality that agents construct, and this perceived form enables the reproduction of durable forms of hegemonic relations (Bourdieu 1990). In line with this argument, Giddens (1984 p. 16), notes that knowledge, power and capability play a crucial role in both the actions of agents and the structures that are created over space and time. The issue of power and equity is central to the empowerment argument of participation. This argument clearly conceived of participation as a process of emancipation of the poor and the transformation of underlying socio–political structures, practices and power relations that reproduce inequality, injustice and social exclusion. This argument is embedded in Marxist political economy and Freirean philosophy rationalised as the pursuit of social justice through radical transformation (Penderis 2012).

In the context of this thesis, the effectiveness and empowerment arguments of participation in development and conservation interventions are extended. This is done by focusing on power relations occurring within institutional spaces designed to function as arenas for the interaction between intervening agencies and communities, to enable their capabilities and foster social justice. Many authors have emphasised the importance of a more in-depth understanding of unequal power relations that occur within institutional spaces designed to facilitate interaction (Cleaver 1999; Cornwall 2003; Gaventa 2006; Penderis 2012). The power relation argument is implicitly and explicitly captured in the different typologies of participation (Cornwall 2008). Framing this argument within the Arnstein (1969) ladder of participation, it has been observed that citizen control appears at the top of the ladder and non-participation at the bottom. In between these two categories is what she called 'tokenism', including consultation, information and placation. She associates tokenism to participation promoted by development organisations, in which giving information and consultation — as forms of participation — are cloaked as empowerment. Consultation is widely used as a means of legitimating an already taken decision. Citizen power, which includes citizen control, delegated power and partnership, indicates empowerment and equity.

The Pretty (1995) typology of participation reveals very similar levels of participation to Arnstein's typology. The first two categories are manipulation and passive participation; for example, the inclusion of a token representative with no real power over decisions already taken. The third, fourth and fifth categories — consultation, participation for material benefits and functional participation — are associated with tokenism. These categories of participation are often associated with the effectiveness argument. The last two categories — interactive participation and self-mobilisation — evoke the empowerment argument, in which participation is a learning process through which marginalised groups influence decisions, thereby gaining a stake in controlling structures and resources. While the Pretty and Arnstein typologies are similar, a typology by White (1996) offers some insights into the different interests at stake in various forms of participation. The typology depicts forms of participation that are arranged hierarchically: moving from nominal participation, which confers the least amount of power to participants, to transformative forms of participation, which confer the highest intensity of power to beneficiaries.

In this thesis, Arnstein's typology of participation is used to analyse community participation in forest governance and REDD+ implementation in Équateur province. Her typology of participation helps illustrate the extent to which citizens have influence over a process and its end product (Arnstein 1969). The typology articulated by Agarwal (2001), which is more appropriate for the purposes of gender participation in these interventions, is used in this thesis. In this typology, participation ranges from nominal participation (membership in a group) to interactive participation, in which a member has voice and influence in the group's decisions (Agarwal 2001 p. 1624). Rather than focusing on how a project is initiated. Agarwal argues that participation is best measured by members' involvement and activeness in a project. As indicated earlier, the household or community is not homogenous: both men and women may have greater or lesser abilities to participate, based on socio–economic factors. The benefits men and women gain from group participation can also vary along gender lines. The level of participation has a strong influence on the benefits that individuals experience. When membership in a group is limited to one member per household, women may not even get the chance to participate. When they do, they can be limited to lower levels of participation than men: nominal, passive and consultative participation are reflected in lower benefits from participatory group action (Agarwal 2001).

3.0 The study area

3.1   Forest governance and REDD+ piloting in Équateur province

3.1.1   Forest governance

It is important to note here that Équateur province in the DRC was divided into five new provinces in July 2015, following the implementation of decentralisation reforms in 2006. The analysis in this thesis is focused on the old Équateur province (before the division), since the data were collected following the political and governance structures of the old province (Map 1). Équateur province has a total area size of 403,292 square kilometres (km^2), and hosts 28 per cent of the total forest area in the DRC (UNDP 2009). The population of the province is estimated at 3,574,385 inhabitants in 2008 distributed into two main ethnic groups — the Bantu and Batwa — also known as Pygmies. The Batwa form only about 20 per cent of the total population and are located in the southern part of the province. The Bantu ethnic group is divided into different sub-ethnic groups, such as the Bangala; the Ngwaka in the north of the province; and the Mongo, Ntumba and Ekonda in the south of the province.

The province is governed by two systems — the administrative/statutory and the customary systems. The customary system relates more to access to land and forests, while the statutory system consists of administrative/political decisions and the enforcement of statutory laws and regulations on natural resources. These two systems are complex, inconsistent and not harmonised (Samndong and Nhantumbo 2015). Administratively, the province is governed by a provincial governor, who is elected by the provincial parliament. The province is divided into five major districts (Équateur, Tshuapa, Mongala, Nord-Ubangi and Sud-Ubangi).
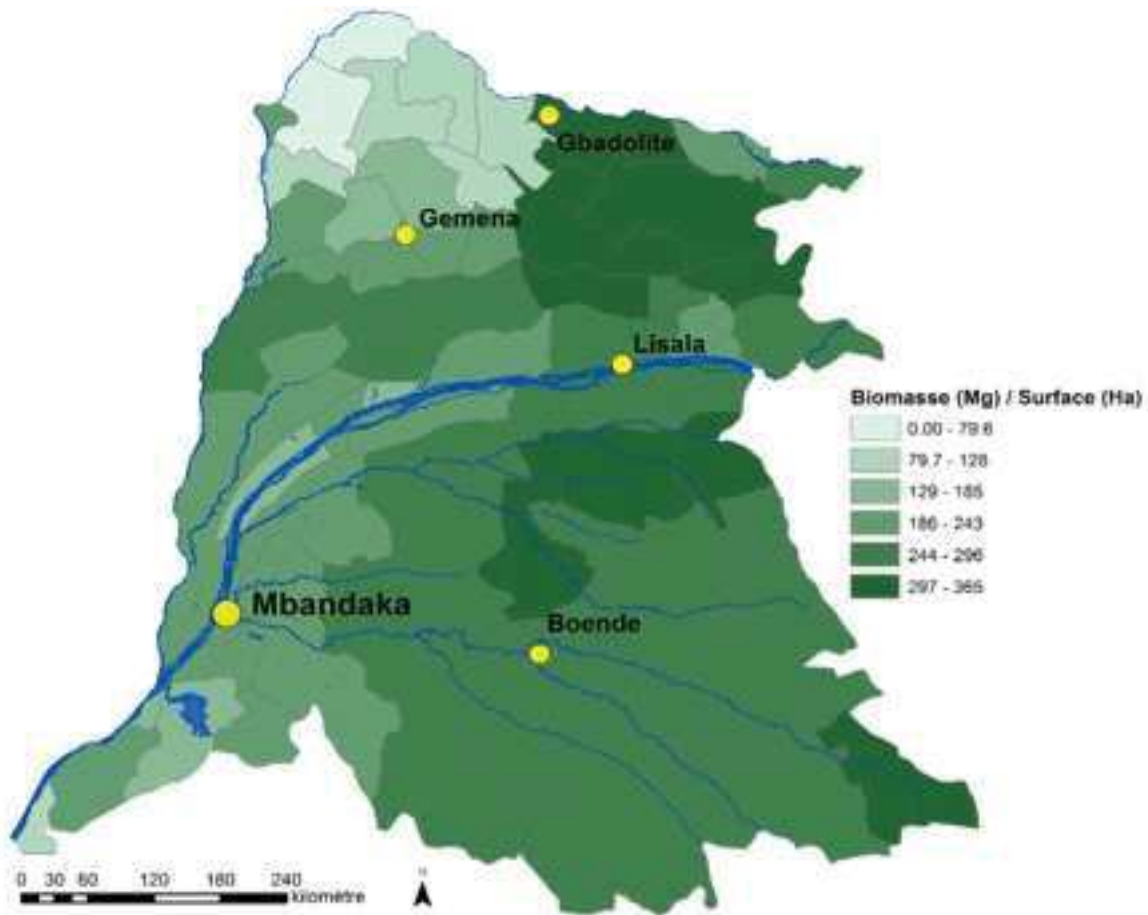
Map 1   Forest biomass of Équateur province showing the administrative headquarters of the new provinces (Chapman 2016)

These five major districts were converted into new provinces in 2015, following decentralisation reforms (Art 2. GDRC 2006). Each of these major districts comprise territories, sectors (small districts), tribal chiefdoms (*groupement*) and localities or villages. Each of these administrative units are headed by an executive who is appointed by the governor, except for the traditional chiefdoms, in which the authority is based on local norms and customs.

According to the 2006 Constitution, the tribal chiefdom is the lowest level of state administration and is defined as a territory homogenous traditional community organised by custom, headed by a chief and recognised by the provincial governor (GDRC 2006). The tribal chief (*chef de groupement*) holds authority over the people, the spirits and the land. Their main duties are to protect the people and the land and to bring fertility to the soil and the rivers. Their

succession is rotational between a numbers of clans in all of the chiefdoms. The tribal chief is also the chief of the lowest administrative unit recognised by the government of the DRC. As indicated in section 2, the tribal chief has a tribal council composed of members from the ruling clans in the chiefdom. An individual tribal chiefdom is made up of many villages and clans.[7] The villages are made up of more than one clan and are headed by a customary chief. Clans are headed by notables whose power is recognised by the tribal chief, and not necessarily the state.

Apart from these two systems of governance, there are many civil society organisations. Many of these organisations are managed by both Roman Catholic and Protestant Missions, while others are privately owned. Some of these organisations run and manage rural development projects, capacity-building initiatives of grassroots organisations, and agricultural service delivery projects supported by the World Bank, International NGOs, United Nations development agencies and Oxfam. Others are involved in environmental activism, human rights issues, conservation interventions and forest governance. In the absence of local government due to delays in the decentralisation reforms to establish these structures below the province level, many administrative texts have institutionalised the establishment of local structures to coordinate and facilitate different development and forestry interventions, including REDD+ implementation (see Samndong & Bush 2017).

The province hosts the second largest forest of the country. This forest is typically dense humid equatorial rainforest that transits into evergreen savannah in the northern part of the province. The southern part of the forest contains huge tracks of swamp forest that intersect the Congo River. The forest is a hot spot of biodiversity, with many endemic plant and animal species and high value timber species exploited for international markets. The deforestation rate is 3.8 per cent, based on 2001–14 data from the Woods Hole Research Centre (Samndong et al. in review). Current proximate drivers of deforestation are preponderantly linked to local land use practices, particularly subsistence agriculture, artisanal logging and charcoal production for local and regional consumption. These proximate causes are driven by some underlying forces, such as demographic, economic, technological, policy/institutional and socio–political factors

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[7] A clan in this context is a group of families that share actual or perceived kinship and descent. In Équateur province and other provinces in the DRC, clans are very important traditional forest management group.

linked to socio–economic and political processes and structured by relations of power at the national and international levels.

The population relies heavily on the forest for their livelihoods by practising extensive slash and burn shifting cultivation, extraction of non-timber forest products, fishing, hunting and charcoal production. The local population practise two types of farming systems in the project area — rotational long fallow and rotational short fallow. The long fallow fields are cleared from forest that has been logged or secondary forest that has been left to fallow for more than 10–20 years, or portions of primary forest. The duration of cultivation is 3–6 years. The short fallow fields are cleared from land left to fallow for a relatively short period of 1–6 years. Burning is often used to clear and prepare the land due to lack of labour and farm tools. Agricultural production is mainly for household subsistence with surplus sold at local markets. Poor roads, which are sometimes only accessible in the dry seasons, coupled with other poor development infrastructures, deprive the local population from accessing external markets and render their export of products very unprofitable.

The forest is managed by both the statutory and customary tenure systems, which often conflict at the local level (Samndong & Bush 2017). The forest has been — since colonial and post-colonial times — regulated for timber exploitation (Debroux et al. 2007; Witte 1992). Logging operations have been highly selective and unsustainable, with the use of huge industrial machinery creating roads into the forest in the search for high value timber. Many communities have been displaced from their customary territories, due to the roads. These roads open up previously inaccessible forest areas, making them more vulnerable to clearance for agricultural expansion, excessive hunting, over-exploitation of forests and charcoal production. Most of the logging concessions have overlapped customary use right territories, creating conflicts between the companies, state authorities and customary landowners. The exploitation activities witnessed have limited field control and weak enforcement and compliance of the regulations. The companies have been interested to increase production, while the state authorities have been more interested in the revenue, of which very little has been redistributed for local development — making the province one of the poorest in the DRC. The customary authority and customary landowners have only been recognised in forest management through the negotiation of logging compensation with the companies. This compensation has been meant

to support local socio–economic development, but, in practice, the compensation has been handed out in the form of cash benefits to the customary authorities and landowners.

Years of conflicts reduced logging pressure on the forest and the collapse of state investment in the agricultural sector increased poverty and food insecurity. The enactment of the 2002 Forest Code and the 2002 moratorium on the allocation of industrial logging permits after the civil war — due to international pressure — saw a new shift in the management of the forest in Équateur province. The newfound political stability following the 2006 Constitution and the decentralisation reform transferred the management rights of forest to provincial authorities. The provincial governor was now mandated to issue artisanal logging permits only to Congolese nationals, with many artisanal loggers still able to access the forest without logging permits. Most of them build relations and provide material benefits to customary authorities to acquire logging rights to the forest. This inconsistency and conflicts over forest tenure has increased artisanal logging operations in the province, putting more pressure on the forest. In addition, charcoal production has become the new economic activity that is putting more pressure on the forest, and is unsustainably practised. Charcoal is now the main energy source in the province, due to the collapse of the thermal electoral plant. Charcoal is also exported to Kinshasa and neighbouring countries (the Republic of Congo and Central Africa Republic) with increased demands. The regulation of charcoal production is very weak and the production is controlled by the customary authorities, while the state is more interested in taxing the transportation and sale of charcoal (Schure et al. 2014).

While the new political stability of the province has motivated new foreign investors, such as the Chinese, there is rapid change as the government and donors focus increasingly on food security and natural resources-driven economic growth. Nonetheless, the country is very active in the REDD+ programme of the Congo Basin. The DRC national REDD+ strategy framework and national REDD+ investment plan, which includes Équateur province, clearly indicates that efforts aimed at changing deforestation rates in the province must include engaging with local communities to help them procure food and energy in ways with reduced impact on forest cover. The recent enactment of the law on community forest offers an opportunity to recognise customary rights to the forest and promote participatory forest management.

3.1.2 REDD+ piloting in Équateur province

The REDD+ pilot project in Équateur province, known as *"projet Zamba Malumu"*[8], is managed by the Woods Hole Research Center (WHRC), in partnership with the DRC Ministry of Environment (MECNT). The project is one of the REDD+ pilot projects initiated in 2011, with support from the Congo Basin Forest Fund (CBFF). The main objectives of the project are (1) to increase the capacity of province stakeholders for the development of REDD+ strategies and preparation for the management of carbon funds; and (2) design and implement community-based REDD+ pilot projects with potential for continued carbon financing. The pilot project supports communities to develop community-based REDD+ projects in the sense of developing a community-based natural resources management system that will be integrated into community forestry. Given that much of the emissions currently generated from forest loss in Équateur province are a result of smallholder farming activities (Laporte et al. 2007), a community-based approach to REDD+ implementation will be at the cornerstone of an effective, efficient and equitable national implementation strategy.

The project is implemented in two pilot sites in Équateur province: Gemena in the north and Bikoro is the south-west of the province (Map 2). These provide two contrasting regions in terms of demography, environmental degradation and development context, in order to pilot REDD+ projects at the local level. This pilot project is unique compared to the other pilot projects in the DRC, in that it is implemented in areas that are not privately owned forests or protected areas, but in areas in which the customary system of land and forest management is predominantly practised, although the forests are state-owned. In Gemena, typically the area has historically experienced high levels of forest loss for extensive livestock production, leaving a mosaic of riverine and remnant natural forest surrounded by degraded pasture. The area is in a region that is a transition zone between tropical forest and grassland. The REDD+ pilot project site in Gemena is located in dense humid rainforest that transits into savannah vegetation. The area has historically experienced extensive commercial logging operations that enable it to convert into cash crop plantations (cocoa and coffee). These plantations were abandoned during the long period of civil instability, and many portions of agricultural land have grown into secondary forest, including huge portions of primary intact dense humid forest.

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[8] *Zamba Malumu* means the forest is good.
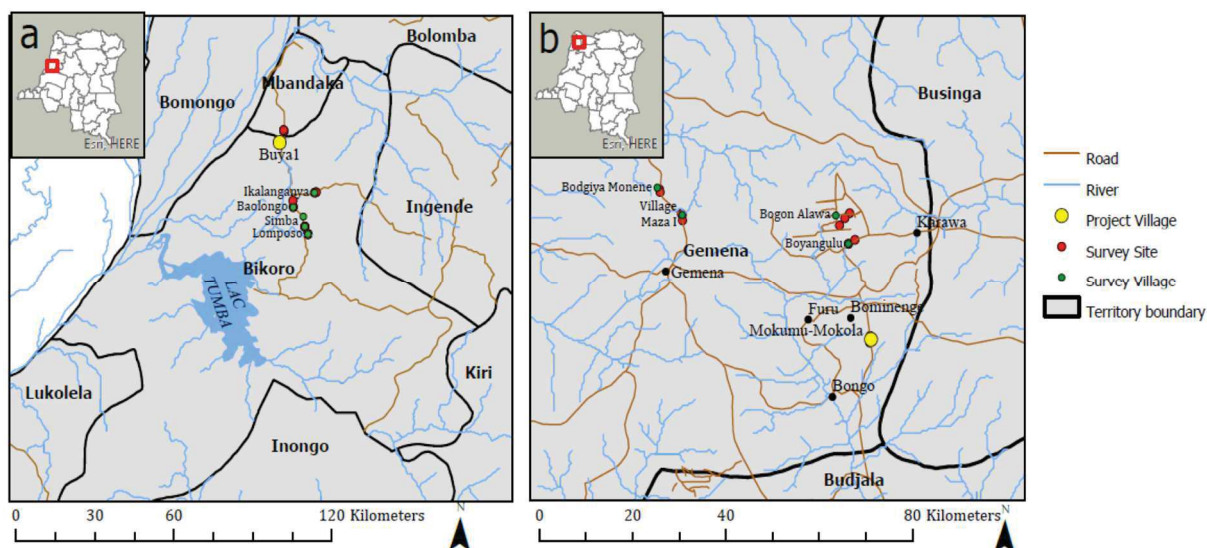
Map 2 **REDD+ Équateur pilot villages (a) Bikoro territory Buya 1 project site; and (b) Gemena territory Mokumu project site** (produced by Chapman, WHRC)

The project site near Mbandaka is in a wetland forest area, and is perhaps demographically — and in terms of forest cover — what Gemena was like around 40 years ago. Blessed with what they perceive as limitless rainforest, community members practise traditional slash and burn agriculture. The main concerns of community members are conflict with logging concessions over rights to exploit timber and access their customary tribal lands. Against this backdrop is the prospect of intensive cultivation of wetland rice to meet local and national food security needs, providing attractive incentives for poor households to increase forest clearance for income and food security.

To achieve the goals and objectives of the project, the WHRC signed partnership conventions with four regional actors to operationalise the implementation of project activities in the two pilots (see Figure 2).

Bureau Diocésain de Développement (BDD) — Diocesan Bureau of Development in Mbandaka: BDD is a regional development NGO under the Roman Catholic Church Archdiocese of Mbandaka, Équateur province. BDD carries out rural development projects, capacity-building initiatives and agricultural and food security projects. BDD has been chosen

by WHRC as the main operating partner to implement the different development activities in the pilot site in Bikoro that will enhance forest protection and reduce poverty in the pilot site.

Eglise di Christ du Congo, 51e Communauté Evangélique de l'Ubangi, Mongala, Gemena (CEUM) — Evangelical Community of Ubangi Mongala, Gemena: CEUM is an evangelical NGO under the Church of Christ in Congo based in the north of Équateur province. CEUM has existed in the north of Équateur province since the early 1970s, undertaking evangelical missions, church development and rural development projects with support from Pentecostal missionaries from the United States and the Paul Carlson Partnership. CEUM was very influential in accommodating displaced local populations in the north of Équateur province during the civil unrest in the DRC that lasted for 10 years. CEUM has been chosen by WHRC as the main operating NGO in implementing the REDD+ activities in the Gemena pilot site.

Jardin Botanique d'Eala de Mbandaka (JBE) — Botanical Garden of Eala, Mbandaka: JBE is an ecological and biological research centre under the Ministry of Environment (MECNT) in the DRC managed by the Congolese Nature Conservation Institute (ICCN). JBE conduct research on the flora and fauna of the tropical forest rainforest in the DRC, the ecological condition and species diversity. It is also an eco-tourist forest reserve that harbours the Ruki River in Mbandaka. WHRC has recognised JBE to conduct ecological and biological research on plant species for the agroforestry activity of the project.

Université du CEPROMAD — Center of Promotion in Management and Development, Mbandaka: CEPROMAD is a higher education institution in Mbandaka with a recently created branch in Gemena. It operates as a private university, offering different academic programmes at the Bachelor level. CEPROMAD is recognised by WHRC to undertake some basic research in the pilot project, capacity-building and training programmes for students, and to develop a communication strategy of the pilot project (incorporating films, video, audio and field documentation).

In addition to these regional actors, WHRC has created new village REDD+ organisations in both pilots. The main objective for creating these new village organisations, according to the WHRC, has been to ensure effective information flow in the pilot villages and to create awareness among village residents regarding the project and project activities. The groups have

also been created to ensure that all of the households in the village are included in the project activities and benefit streams. Past projects that have worked with the customary authority, and/or the peasant development associations in Bikoro, have excluded many villagers from the benefit streams (Samndong 2015).
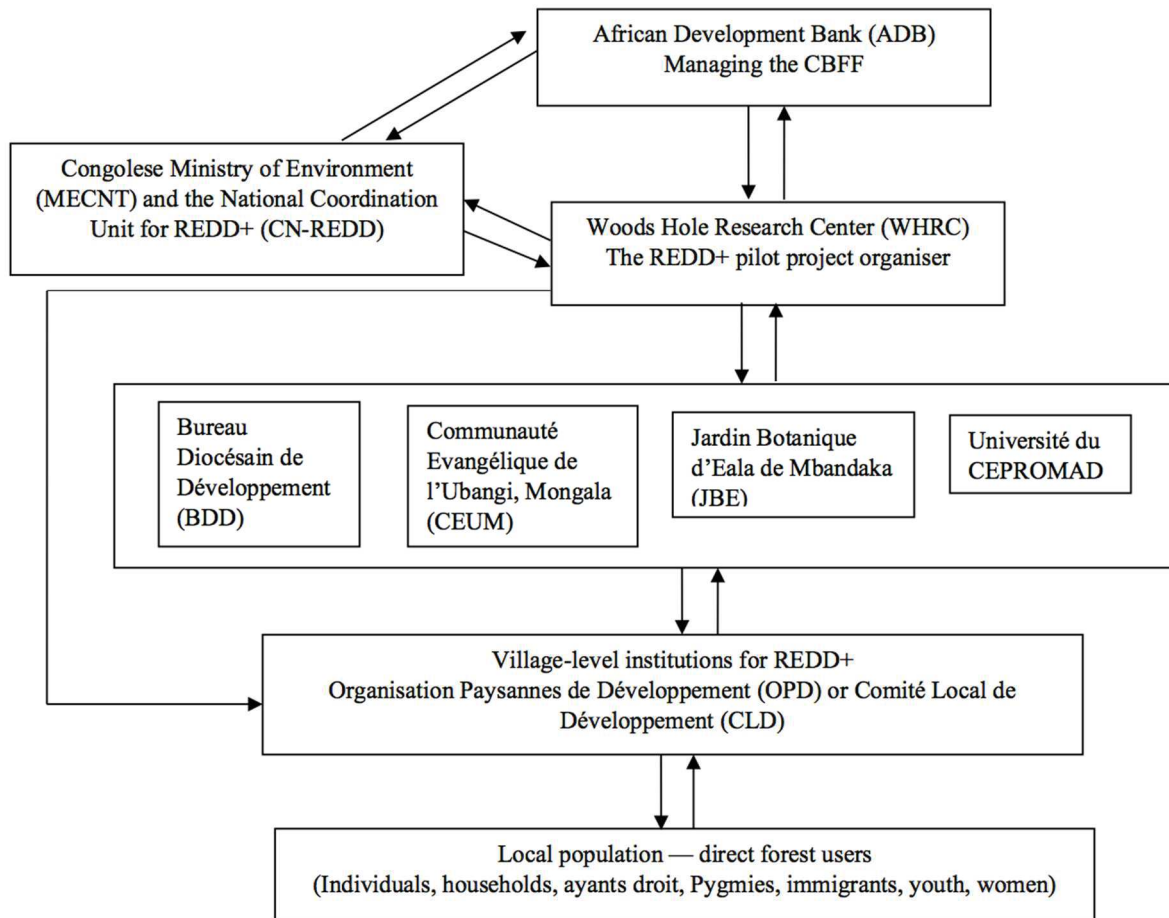
The arrows indicate the interactions and coordination between the structures (transfer of resources, information, technical assistance, capacity building, representation and accountability).

Figure 2 Emerging governance structures for REDD+ pilot projects in Équateur province

This REDD+ pilot project was chosen for the thesis because it was the only REDD+ pilot project that offered access to investigate the pilot project processes and activities during the design of the PhD research proposal and instruments. According to information gathered from the project organiser (WHRC), the project sites were selected for several reasons. Firstly, the sites have a huge intact block of primary forest that is dominantly regulated using customary tenure in practice. The presence of logging in the project sites has encouraged widespread

clearing for subsistence agriculture, extraction of forest products and charcoal production, which have all threatened the forest. It is, therefore, important to assess how REDD+ is implemented under such conditions.

Secondly, the project sites, particularly Bikoro, have experienced many interventions related to agricultural development and forest governance in recent years. The project sites have also interacted with many NGOs and development agencies implementing rural development projects, capacity-building initiatives, conservation projects and agricultural service delivery. For political reasons,[9] more of these projects were concentrated in Bikoro territory than in Gemena territory. The IUCN forest governance project on "Strengthening the Voices for Better Choices" (SVBC) in Bikoro territory was quite instrumental, among others. With the advent of REDD+, it will be interesting to see how the experiences gained from those projects shape the local governance structures in REDD+ implementation.

Thirdly, the contemporary forest policies of the DRC do not meet the needs and aspirations of forest-dependent communities, with evidence of increased poverty, weak state institutions, conflicting claims over lands and forests, displacement of forest dwellers and a marginalised group (Batwa Pygmies) with huge traditional knowledge about forest protection that could be explored. There is also weak law enforcement and a high rate of corruption. All these issues are visible in Équateur province and at the project sites, and it is important to examine how the REDD+ process addresses these issues in the pilot sites.

The field research for this study was conducted in the villages selected for the REDD+ pilot project and other villages in the territories. The first REDD+ pilot project site is in Buya 1 village located in the Secteur Elanga district of Bikoro territory. Bikoro territory is made up of three districts — Elanga, Lac Ntumba and Ekonda. Elanga district is made up of two tribal chiefdoms — Bofidji west and Bofidji east. Buya village belongs to the Bofidji west tribal chiefdom, located along the main road that links Mbandaka and Bikoro. The village has an estimated population of about 3000 inhabitants, with about 300 households located just 42 kilometres from Mbandaka, the seat of administration for Équateur province. The main ethnic

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[9] This region was a stronghold of former president Mobutu during the war of 1996–2002. After the war, the region became the stronghold of the main opposition party, Mouvement de Libération de Congo (MLC) of Jean Pierre Bemba under the Kabila administration, limiting presidential supports and political priority.

groups are the Mongo and Batwa Pygmies. The Batwa Pygmies are not considered customary landowners; they are migrants from the Ingende territory. The village is made up of the clans —Ekole, Esangele-Nkoy and Djipanga — and migrants from other districts and territories of the province. Historically, Buya 1 village is one of the villages created by the Belgians in the early 1920s to accommodate displaced villagers from their ancestral lands during construction of the commercial road that linked Mbandaka and Bikoro. The land and forest of Buya 1 is claimed to have originally belonged to both the Ilanga and Bogonde villages before the arrival of the Belgians.

The second pilot site is in Bokumu-Mokola/Bongo village located in Secteur Banga-Kungu of Gemena territory. Secteur Banga-Kungu is made up of three tribal chiefdoms — Bombakabo, Bokode and Bominenge. Bokumu-Mokola/Bongo village belongs to Bominege tribal chiefdom, located about 60 kilometres from Gemena town. The village has an estimated population of 2700 inhabitants, with about 280 households made up of one ethnic group known as Ngwaka. There are five clans in the village — Boyabakona, Boyagbandolo, Bobanda, Bogbando and Boyangadaka.

Part of the data in the study has also been collected in other Secteurs of both territories. In the case of the baseline data used in Paper 2, five villages were selected. Three of these villages in Secteur Elanga — Buya 1, Ikalanganya and Baolongo — were selected and considered as the REDD+ pilot site; and two villages — Nsimba and Lomposo — were selected in Secteur Lac Ntumba[10]; with all in Bikoro territory. In the Gemena territory, three villages — Bokumu-Mokola, Bogon-Alawa and Boyangulu — were selected in Secteur Banga-Kungu and considered as the REDD+ pilot project site, and two villages — Bodigia Monene and Maza 1 — were selected in Secteur Nguya.

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[10] The data collected from the villages outside the REDD+ project site were to be used as controls for the impact analysis study (not yet done).

4.0 Research design and methods

This study was conducted under the project Man and Forest — an evaluation of management strategies for reduced deforestation and forest degradation (Mana_Forest Project) (Vatn et al. 2016). The project was aimed at evaluating different governance structures of REDD+ pilots at the local level and their impacts on deforestation and forest-based livelihoods. The project was framed within the tradition of interdisciplinary environment and development studies that aims to understand complex social–ecological systems using different approaches and techniques from social science disciplines (Visseren-Hamakers et al. 2012).

The project was originally designed to follow an extended 'before-after-control-impact (BACI)' research format. The 'before' (baseline) part was undertaken in a previous project 'Poverty and sustainable development impacts of REDD architecture; Options for equity, growth and the environment (POVSUS–REDD)' (June 2010 – May 2013).[11] The BACI research design demands the selection of treatment and control sites (see Smith 2002) and observing relevant variables, both before and after intervention. The control sites are used to facilitate control for trends/effects of changes not attributable to the (REDD+) intervention. In the project, the different project partners in the involved countries made the choice of treatment and control sites.

The standard BACI format includes two phases: 'before' and 'after'. The research design was expanded with a third phase. It included a baseline ('before') study phase, a process assessment phase and an outcome ('after') phase. The baseline phase involves collecting data to map out the present situation of access to, and use of, forest resources and livelihood assessments, including logging activities at the local level before the REDD+ intervention. This data is important to assess the outcome of the REDD+ intervention. The process assessment phase involves documenting and analysing the introduction and implementation of REDD+ at the local level, with the recording of actual activities, the choice of governance structure, their sequence and the actors involved in this phase. This kind of data is important for any evaluation

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[11] The Mana_Forest Project and POVSUS–REDD were large comparative studies. While the Mana_Forest Project also covered pilots in Brazil, Tanzania and Uganda, POVSUS–REDD covered pilots in these countries, plus Ghana and Vietnam.

process and for understanding why the project did or did not achieve its goals. The outcome assessment phase involves measuring the observable outcomes after the REDD+ intervention and comparison with the baseline data. This will give an indication of what the situation would have been without REDD+ intervention. The outcome assessment is intended to measure and interpret what causes the effects of the intervention by comparing with the control sites.[12]

4.1 Overview of the research design

While this thesis was set up to follow this research design, the particular REDD+ pilot project was interrupted, with delays in implementing project activities. This made it impossible to assess the outcome of the pilot project. The research strategy was, therefore, adapted, with the 'before' part expanded by assessing power relations in existing interventions, and looking more in-depth at the property rights situation and drivers of deforestation. The process part was also expanded with deeper analysis of the gender issue. However, the case study format of BACI was maintained.

Different definitions exist and there are many important discussions regarding a case study research design (see Ragin & Becker 1992). The most common use of the term 'case' within social science can be associated with a location, such as a community or organisation, and can also be about individuals and historical events (Bryman 2008). According to Bryman, a "basic case study entails the detailed and intensive analysis of a single case" (Bryman 2008 p. 52). Nevertheless, it is important to note that a case study can also entail several cases, and a distinction is made between a single-case (such as the study of one community or organisation), and a multiple-case (containing a replication of study of two or more organisations or communities). In addition, a further definition can be made between a case study which is holistic and one that is embedded. A holistic case study means that an entire unit (or units) are studied, be it, for instance, a community or an organisation. An embedded case study, on the other hand, focuses on more than one unit, and is split into multiple units of analysis (Yin 2009). Following Yin's definition, the case study in this thesis is single and embedded, as it analyses

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[12] There are limitations to using the BACI research design in assessing the outcomes of a REDD+ intervention. It can be very challenging to select good control sites, and there may be spillover effects (leakage) etc. As is made clear in the main text, the pilot projects studied have developed very slowly and the 'after' study could not be undertaken within the timeframe of the PhD. Therefore, these issues will not be discussed in further detail.

the experience of a specific country with REDD+ at the local level. Looking at the different categories of cases discussed by Yin (2009) and Bryman (2008), this thesis is an example of a *representative/typical* or *exemplifying case,* which is either to epitomise a broader category of a case or provide a suitable context for certain research questions to be answered (Bryman 2008 p. 56). In addition, exemplifying cases allow a researcher to examine key social processes or policy interventions that the researcher wants to assess the characteristics of, such as in the case of REDD+ piloting at a community level.

Case study research is often associated with qualitative research, but combining qualitative and quantitative data strengthens the case studies (Yin 2009). This choice of data also depends on the aim and objectives of the research (Crotty 1998). In the context of an interdisciplinary tradition in which this study is situated — with a focus on understanding complex social–ecological systems or phenomena, such as human–forest interactions — a mixed method study design is preferred. Both qualitative and quantitative approaches are thus employed. Following the project research design outlined, the 'before' study was conducted using a livelihood quantitative survey approach to map out smallholders activities and land use patterns, including qualitative information about the existing forest management regimes. The process study uses a more qualitative approach to understand the contextual socio–political and structural factors that have shaped or enabled how these interventions are implemented in achieving the expected outcomes (see Table 1 for a summary of concepts and methods applied in each study).

Although it is very challenging to draw general conclusions from case studies and to extrapolate or scale up findings, detailed information can be provided about the dynamics of drivers and agents of land use change (Angelsen & Kaimowitz 1999; Hersperger et al. 2010; Yin 2009). The case study is important to understand how policies designed for forest protection and poverty alleviation actually reflect realities on the ground. This is quite important for a huge country like the DRC. It is a fragile state that has witnessed long civil unrest and centralised top-down policy approaches with natural resource governance (Karsenty & Ongolo 2012). The effects and attributes of these policies on the ground varies between contexts. This case study particularly focuses on the attributes of policy transformations at the local level, and what implications these may have for concrete policymaking, planning and long-term implementation of forest-related policies.

Table 1   Linking the research questions to key concepts, methods and analysis

Research questions	Key concepts	Methods of data collection	Methods of analysis
RQ1. What are the effects of recognition by intervening forestry and development agencies on substantive citizenship in Équateur province in the DRC? (Paper 1)	• Citizenship, recognition, power relations and local institutions/authorities	• Local institutional mapping • Key informant interviews • Focus group discussions • Field observations	• Actors and institutions • Membership in groups • Power resources • Mechanisms of access • Accountability relations
RQ2. What are the dynamics of deforestation in Équateur province with respect to both proximate and underlying causes? (Paper 2)	• Deforestation, proximate causes, underlying causes, institutional theory	• Policy document analysis • Household questionnaires • Key informant interviews • GIS geo-references • Field observations	• Content analysis • Local land use practices • Statistical analysis • Institutional analysis
RQ3. How do existing forest tenures influence forest governance and REDD+ implementation in Équateur province? (Paper 3)	• Forest tenure • Property rights • Governance structure(s) • Institutional pluralism • Institutional bricolage • REDD+ implementation	• Policy document analysis • Local institutional mapping • Key informant interviews • Focus group discussions • Field observations	• Forest governance analysis, • Actors and institutions • Local power dynamics • Forest practices • Design of REDD+ organisations
RQ4. To what extent does gender inclusion shape forest governance and ongoing REDD+ intervention in Équateur province? (Paper 4)	• Gender, forestry and development intervention • Participation • Bargaining power • REDD+ implementation	• Local institutional mapping • Key informant interviews • Focus group discussions • Participant observations • Field observations	• Knowledge and use of forests • Membership in groups • Participation in decision-making processes/activities • Level of information • Benefits • Power dynamics
RQ5. What characterises the process of introducing REDD+ activities with respect to community participation in Équateur province? (Paper 5)	• Community participation, empowerment, institutional arrangement • REDD+ introduction/activities	• Household questionnaire, • Key informant interviews • Focus group discussions • Participant observations • Field observations	• Level/type of participation • Knowledge/information • Local power dynamics • REDD+ activities • Local perception

4.2 Data collection

Different data collection techniques were employed in the study. In addition to personal approaches and instruments, the research instruments developed for the POVSUS–REDD+ project and the Mana Forest Project were used. The author actually participated in the development of these instruments, being engaged by the POVSUS–REDD+ project to help develop them. These research instruments included: a household questionnaire, an interview guide for local resource person(s), and an interview guide for focus group discussions (FGDs). A field manual accompanied these research instruments to provide some practical information for collecting the information, and relevant definitions of key concepts and practical issues. The author also participated in the development of this guide.

4.2.1 Written information

The research started by collecting written information and undertaking an institutional mapping of natural resource governance in the DRC. The material included policy documents, legal texts (Forest Code, 2006 Constitution, Biodiversity law etc) and different administrative texts related to forest governance. The REDD+ policy documents of the country and various administrative text related to REDD+ implementation were also consulted. The policy documents included agricultural policy reform, forest governance and land tenure reform documents; biodiversity conservation policy documents; and policy documents related to extractive activities, such as mining. Due to a general lack of statistics regarding demographic and important socio–economic developments, many development agency reports about the DRC and Équateur province—including UN peace mission reports—were consulted. Reports produced by different national and international NGOs working on forest governance issues, environmental activism and human rights and food security in the DRC were also consulted.

4.2.2 Interview data

4.2.2.1 Semi-structured and key informant interviews

In total, 146 people — reflecting different categories of actors, from the national to the local level — were interviewed for this study between 2012–16. Permission for carrying out the interviews was requested and people were thoroughly informed about the objectives of the study and the purposes of interviewing them. Before interviewing people, their confidentiality

was ensured and informed consent for carrying out interviews was obtained. At the national level, the interviews included representatives of donor agencies engaged in forest governance and REDD+ officials at the National Ministry of Environment and Sustainable Development, Ministry of Agriculture and Rural Development and the Ministry of Land Affairs. The author interviewed staff of the National Coordination unit of REDD+, as well as staff of both national and international NGOs engaged in forest governance and environmental activism. The main intentions of these interviews were to understand key interventions and strategies, the actors and institutions involved, key challenges and opportunities in achieving goals, and recommendation for policy actions.

At the regional and local levels (the two territories of the REDD+ pilots), seven categories of actors were interviewed: (1) provincial parliamentarians; (2) local state administrators, including staff of the Ministry of Environment (at the local and regional levels); (3) staff of intervening NGOs and agencies; (4) customary authorities; (5) the executive members of local village associations; (6) staff from the REDD+ pilot project; and (7) logging operators. The intention of these interviews was to gather information about the power and resources transferred to local authority structures, as well as to find out how these powers and resources have enabled these local authorities to engage the local population in local decision-making processes and the implementation of these interventions. The interviews also targeted local forest practices and how economic actors adapt to existing institutions to access forest resources. Information was also gathered concerning gender knowledge, access and use of forests, and the inclusion of women in decision-making and benefit sharing from these interventions. The interviews also targeted community and gender participation and perceptions about REDD+ introductions, the establishment of REDD+ village organisations and participation in early REDD+ activities. At the villages selected for the study, factual information was collected about demographics, prices of agricultural products, profitability, land use and property rights/tenure arrangements, forest status and the land market. The instrument targeted local authorities in the villages, local opinion leaders and executive members of local village associations (such as groups of famers). In each village, an interview session with 10 people under each category of actors listed was organised to capture this information in the village. In some cases, there were demonstrations with the use of local instruments for measuring agricultural and forests products to get the right values. The author

verified this information with state authorities, although some of this information was not available at local administration offices. Students from local universities and local researchers with knowledge of the pilot areas were hired for the data collection. The instruments for the before study were pre-tested, with adjustments made to some questions to fit the local context.

4.2.2.2 Focus group discussions

This instrument was aimed at collecting information on the livelihood conditions, social and political dynamics at the village/community level. In particular, it was aimed at giving insights about core agents operating at this level, including their interactions and relationships with community members and their perceptions about existing interventions; as well as community perceptions concerning forest status and an evaluation of access rules and management practices for forest resources. The main purpose of the instrument was to provide insights into how local people see and express their general livelihood situations, and how they evaluate local governance and power structures, as well as local informal and formal tenure rights. Their general attitudes, values and norms in relation to forest resource management and use were also probed, with enquiry about what kind of ideas and suggestions they would have for potential REDD schemes in their local communities. The instrument also focused on collecting insightful information about gender knowledge, access and use of forests, and the inclusion of women in decision-making and benefit sharing from these interventions. The interviews also targeted community and gender participation and perceptions about REDD+ introductions, the establishment of REDD+ village organisations and participation in early REDD+ activities. To capture local insights about these issues, three rounds of FGDs were conducted for the entire study from 2012–16.

Nine focus groups were organised in three villages of the Bikoro pilot, assesing power relations and citizenship in existing interventions that constitute Paper 1 of the study. These focus groups were established using a wealth-ranking exercise to categorise the local people into different socio–economic groups, based on the wealth indicators in the village provided by them.[13] Based

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[13] Wealth indicators used include: size of farmland and total number of land parcels, material used in roofing the house, material used in house construction, households physical assets (house, motorbikes, mobile phones, bicycles, TV, radios, generator, solar panel, plastic chairs, farm tools), number of wives, number of livestock (goats, pigs, chicken), number of children in schools, fishing nets, canoe.

on an assessment, three categories were obtained after the exercise: the poor, the middle class or better off, and the well off or rich in the village. Since material resources are an attribute of power in the local arena, the wealth-ranking exercise provided an opportunity to discover the villagers' level of influence in these interventions based on their material resources.

For the before study, 45 focus group discussions were organised in 10 villages: five focus groups of men, women, customary landowners, migrants and Pygmies per village in Bikoro pilot site; and four focus groups of men, women, customary landowners and the migrants per village in the Gemena pilot site. The women and Batwa Pygmies were grouped as separate groups. The Batwa Pygmies are socially and economically subordinated to the Bantu, while the women are an often-marginalised group. These two groups are often reluctant to voice their feelings, views and perceptions in front of both their Bantu neighbours and men; hence, they were separated to capture their voices concerning these issues.

For the process study, nine focus group discussions were organised with 10 members in each group. Five groups in the village Buya 1 (project village in Bikoro) of men, women, customary landowners, migrants and Pygmies; and four groups in the Bokumu Mokola (project village in Gemena) of men, women, customary landowners and the migrants.

4.2.2.3 Household survey

A household questionnaire was used in the before study to complement the PRA instrument, and the data was a key component in Paper 2. In total, 360 households[14] were surveyed from five villages in each of the two indicated pilot sites. The questionnaire was structured to collect data about the socio–economic characteristics of land use activities, the use of forest resources, and perceptions of local institutions regarding forest management and the newly started REDD+ pilot project in the villages. It was difficult to use a random selection of households in the survey, as there was no reliable list of households in the villages (e.g. from census or election) as a starting point for the random selection of households. Stratified random sampling was used, with households selected from a list of households compiled by WHRC and village

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[14] Household was defined in the questionnaire as a group of people (normally family members) living under the same roof, and pooling resources (labour and income).

authorities. This stratification ensured that some groups, such as the Batwa Pygmies, were represented with households in the total sample for Bikoro pilot site.

A household questionnaire was also used in the process study to collect data on local people's knowledge about REDD+, their participation in REDD+ introductions, the establishment of a REDD+ village organisation and the implementation of early REDD+ activities, and general perceptions of the REDD+ pilot project. In total, 151 households were surveyed from the project villages — Buya 1 in Bikoro and Bokumu-Mokola/Bongo in Gemena. The respondents were randomly selected (70 per cent) from the list of REDD+ activities and those whose names were not on these lists (30 per cent). This stratification ensured a good representation of the sample and good coverage of those involved in the REDD+ activities. The stratification also ensured that Batwa Pygmies from Bikoro pilot site were represented in the total sample.

4.2.3   Other sources

4.2.3.1 Participant observation

The author participated in different meetings and workshops organised during the REDD+ introduction process in Gemena pilot. How these meetings and workshops were organised was observed, along with what transpired in the process, the nature of the meeting venues, formalities of local inclusion in the process, mechanisms of community engagement and deliberation, the type of information provided, the overall dynamic of the process and how conflicting issues were resolved. Apart from the REDD+ introduction process, the author also participated, as an observer, in different meetings organised by development agencies and NGOs in Bikoro pilot. Participant observations helped add depth to an understanding of people, society and the environment, including interactions and relationships with external actors and social institutions, sense of identity and cultural belonging, personal conflicts, life modes, social interactions and economic interests. It also helped the author identify informants who could provide insights through informal conversations. This was particularly relevant for the first paper and the papers about the process study in generating knowledge at the local level.

4.2.3.2 Field observation and GPS waypoint collection

Field observation was also used as an additional data collection method to add depth to the author's understanding of people and their environment. Information including availability, and quality of infrastructure such as roads, schools, healthcare, means of transportation, community projects, traditional use of resources and illegal activities were all taken into consideration. GPS coordinates were collected in each village to map out the village land use types, limits of village forest and the status of the forest, and to assess how the forest cover had changed over time. The author walked into the forest and visited farmlands (slash and burn agriculture), crops, fishing streams, hunting sites, non-timber forest products (NTFPs), charcoal production sites and abandoned logs in already logged portions of the forest, with secondary and primary forests and their limits all noted.

4.3 Research limitations and challenges

During the field research, several challenges were encountered that had to be dealt with. The first challenge related to written sources. It was difficult to access some key administrative texts and records of land use activities in the province, due to poor recording of data. Officials in charge verbally explained some of the administrative texts. In addition, limited studies and publications on forest governance, agroforestry and other land use activities in Équateur province and the DRC were available, compared to for other countries in the Congo Basin, such as Cameroon. Most of the development agency and NGO reports consulted as research lacked vigorous analysis of the key issues, and some of the data were not very reliable. Further, most of the reports and policy documents were written in French, which demanded more time to read and translate into English.

Second, most of the questions in the household questionnaire were of the recall type, requiring respondents to remember activities they performed during the year before the interview (e.g. how much was harvested, and the price per unit of each product during the course of the year. Income estimates were made based on households' activities and outcomes during the past 12 months. The quality of the data, therefore, depended partly on local people's abilities to recall and to estimate. Many members of households were involved in interviewing sessions, in an attempt to reduce the problem. This could have some impact on the data concerning some of

the key variables used in the study. The income and production data were based on estimated figures given by respondents. Despite efforts to ensure as high a level of accuracy as possible, there were some uncertainties regarding these estimates.

Third, all of the interviews — including the focus group discussions at the local level — were administered in Lingala and local languages. Although the local team hired for the field research in both pilots had good proficiency in these languages, interpreting these questions to the local people in Lingala and their local languages implied a risk of loss of information, since a single word in Lingala or local languages might mean many things. Furthermore, the responses were translated from Lingala and local languages to French and then English. This process possessed serious risks of loss of some information, especially in the qualitative data. The author learnt Lingala and used a French and Lingala dictionary in the field to minimise this risk.

Fourth, a local research team was used in the survey to ease the workload and to maximise the efficiency of data collection. Although this made it possible to cover more ground in a shorter period of time, it increased the risk of misinterpretation or loss of details, as members of the team were not as familiar with the aims and objectives of the research, and might not always ask follow up questions when needed, or try to clarify inconsistencies appearing. They may, not, moreover, have been as persistent in reformulating questions to get the information needed as possible. This risk was minimised, however, by keeping an open dialogue with the author.

Fifth, not all the households surveyed in the before study used conventional units of measurement, such as kilograms. They used their local systems of measurement, such as bags, pockets, baskets, cups, basins and so on. It was very challenging to convert local systems of measurement into the standard unit of measurement used in the questionnaire, as there were some variations in the villages. To minimise this problem, the research team performed some of the measurements together with local resource persons to get the right measurements for some of the products. Furthermore, large quantities of the local production were for household consumption, and it was very difficult for local people to estimate and recall the quantities consumed by households. In addition, the local people in both pilot villages did not sell firewood poles, as only household members consumed these products. It was very difficult to estimate the quantities consumed per household in a week. For NTFPs, the quantities consumed

were not recorded, with those who used these products and level of importance they placed on them both noted.

Sixth, there was a problem of research fatigue because of local expectations. Some of the respondents lacked motivation in participating in the survey and interviews, especially in the Bikoro pilot. Here, communities have witnessed interventions by many different NGOs and development agencies, particularly in the areas of food security, environmental activism and conservation in the past 6–10 years. Many of these villages have been subject to a number of previous studies and evaluations focusing, in particular, on different development and forestry interventions, with some studies still ongoing. There were some local people who were not motivated to participate in the interviews because of negative experiences in previous studies. Some demanded high per diem for their participation, or became motivated to participate just because of the per diem. The local research team was able to identify this challenge, based on their experiences working at the pilot sites.

Lastly, the research team lacked appropriate research material and equipment to embark on the field survey. There were no raincoats, forest booths or efficient torch lights and sleeping materials. The survey was seriously interrupted by heavy rainfall and poor roads, especially in Gemena territory. Given the lack of sufficient field materials and accommodation in these villages, the local research team was forced to stay in nearby towns and travel about five hours each day to the villages and back. This caused fatigue and led to a loss of time.

4.4 Data analysis

All the policy documents and grey literatures consulted were analysed through a combination of exploratory analysis (Thai et al. 2008) and iterative content analysis (Kohlbacher 2006; White & Marsh 2006). Exploratory analysis involves a broad and quick overview of documents to identify specific issues of concern, such as the actors and institutions in a policy process (Thai et al. 2008), while iterative content analysis involves in-depth analysis to establish a particular information sequence (White & Marsh 2006). A combination of exploratory and iterative document analysis provides a systematic way of retrieving useful information from documents. Through this analysis, the author was able to map out most of the institutions and actors involved in forest governance and their different power resources.

All the interviews and field notes from the focus groups were typed into a computer and transferred into a prepared word template. Interviews and information that were voice-recorded were downloaded to a computer and transcribed. Those that were voice-recorded in Lingala and local languages were transcribed and translated into French by the local research team, and recorded in the word template. The data were analysed through coding which statements and narratives were categorised into themes related to the questions in the interview guides. Some of the data were coded to draw out themes and illustrative quotes (see Hopkins 2007).

The data from the household questionnaire in both the baseline and process studies were analysed using Stata and SPSS statistical software. The SPSS software was used in analysing both descriptive statistics and inferential statistics. Chi-square (χ^2) tests were used to examine relationships between variables, when appropriate. This study used a level of significance of p = 0.05 (i.e. the statistical significance was set at a confidence level of 95 per cent).

Stata was used to run multivariate regressions from the baseline data. This was mainly useful in answering research question 2 (Paper 2). These regressions — random effect logit regression and ordinary least square regression (OLS) respectively — were performed to understand household decisions: firstly, to clear forest land; and secondly, for those that had cleared, the likely influence regarding how much was cleared.

The GIS coordinates collected during the field studies on the villages land use types and the status of the forest were transferred to WHRC and integrated in their GIS database for analysis. Some of this analysis was used in Paper 2 of the thesis.

5.0 Summary of papers

This thesis consists of five research papers covering the findings of the research questions outlined in Section 1. In this section, I present a comprehensive summary of each research paper. For the sake of consistency, concepts already introduced in earlier sections are only mentioned in the briefest possible way.

5.1   Institutional choice and fragmented citizenship in forestry and development interventions in Bikoro territory, the Democratic Republic of Congo

The first paper examines past forestry and development interventions and how citizenship has been exercised in these interventions in Bikoro territory selected as a REDD+ pilot site. The main objective of the paper was to assess the effect of recognition by intervening forestry and development agencies on substantive citizenship, and draw lessons for REDD+ intervention. The paper assesses two of these interventions — forestry and development interventions. In the forestry intervention, the paper examines the distribution of logging compensations (cahier de charge) in the villages in which logging operations have occurred. In the development intervention, the paper examines agricultural and food security projects implemented by the BDD. To implement these projects, actors involved with these interventions have chosen local institutions as partners; notably, the customary institutions/authority for the negotiation and distribution of logging compensations, and the Peasants Development Association (OPD) for the food security project.

The forestry intervention has transferred power to the customary chiefs, based on the 2002 Forest Code to negotiate logging compensation with the logging companies. The customary institution in the study area is composed of the head chief of the main ethnic clan (*chef de groupement*), the village customary chief (*chef cuotumier*), the notables (the head of the main families in the village) and the customary landowners of the village (*ayants droit*). The development interventions (food security project) have transferred information, training and resources (money to organised village meeting, farm tools) to the OPD through an executive committee. The OPD is composed of a general assembly made up of members and an executive committee. Membership is open to the villagers based on a membership fee of USD 1, and a

monthly contribution of USD 0.5–1. The members of the executive committee are elected with a four-year renewable term of office. Certain criteria are required to be elected to the executive committee, including abilities to: read and write in French, speak well in public, have certain power resources (physical assets and level of education), command respect in the village, and be able to protect the interests of the village. The executive committee constitutes the final decision-making body of the OPD, overseeing all the activities of the organisation, organising village meetings once per month and calling emergency meetings if needs arise.

In the paper, citizenship is theorised as the ability to influence local authorities, or to engage substantively in interventions. This ability to influence is shaped by the power resource of the individual, and the accountability mechanisms that join the authorities and the individuals or groups. Implicitly, citizenship is a function of power resource. Power resource was the main variable used in the research to operationalised citizenship in these interventions. Power resource, in this context, included access to land, knowledge/information, physical assets and material relations. The paper shows that citizenship in these interventions, as defined in the paper, is limited to very few villagers in the study area. In the forestry intervention, only the villagers with customary rights to land benefited from the logging compensation. In addition, although the customary chiefs regulate local access to land, their decisions to issues related to land and forests are sometimes constrained by local state administrators and police authorities. This competing power relation speaks to the plurality of state recognised power centres at the local level. In the development intervention, only the villagers with power resources (financial capacity, access to land, knowledge to articulate their needs) are able to engage and benefit from the intervention. The executive of the OPD are not accountable to the members, because the power resources available to the members to demand accountability are weak. Therefore, in Bikoro territory, only local people with available power resources are able to influence local authorities and benefit from interventions. Power resources in Bikoro are closely linked to the legal political processes regulating access to land, relational mechanisms of access to land and inadequate social infrastructures. From the findings, the villages in Bikoro territory are not homogenous, and are not made up of groups of actors with common interests. These villages are very dynamic and have gone through a series of social stratifications in which power, rights and ability have shaped and reshaped their levels of cooperation and access to resources and opportunities. Empowering these local level institutions for REDD+ interventions without

readdressing existing inequalities with access to resources and interests adds insult to the wounds (Fraser 2008 p. 69) of vulnerable segments of the local population.

The paper suggests that identity and interest-based forms of inclusion and exclusion may be unavoidable in forestry and development interventions at the local level. Therefore, to strengthen local citizenship and consolidate local democracy in the absence of democratic local institutions, REDD+ project proponents in Bikoro territory need to carefully map local power relations and the processes that create them — as well as existing social values, norms, social institutions, interests, and rights — to assist in empowering intervening authorities to adopt rules and practices that enhance collective action and equitable redistribution.

5.2 Institutional analysis of causes of deforestation in REDD+ pilot sites in Équateur province: implications for REDD+ development in the Democratic Republic of Congo

The second paper challenges the deforestation claim in REDD+ policy discourse of the DRC that holds that agricultural expansion due to population growth is the main driver of deforestation, while undermining the underlying factors that influence this process. The paper applies the environmental governance framework developed by Vatn (2011) to assess the proximate causes and underlying driving forces of deforestation in the REDD+ pilot project areas. Using both quantitative and qualitative data, including GIS information, the paper describes household land use activities that cause deforestation and the factors that influence household decisions and capacity to clear forest land. The paper also assesses the underling forces often operating at the regional and national levels that shape or influence local land use decisions.

The paper shows that agricultural expansion through shifting cultivation is the main proximate cause of deforestation. Logging activity accelerates this activity. Logging activity opens the forest with logging roads, including areas that were formerly inaccessible. The logged forest areas become much more accessible; hence, they can be readily convertible to farmland. The statistical analysis confirms that the presence of logging activity influences household decisions to clear forestland. Local people consider shifting cultivation as the most sustainable land use strategy, given the limited demographic pressures and labour, abundant forestland, poor

technology and limited access to markets. Households in the study area clear forest because there is no alternative income-generating activity. The amount of forestland clearly depends on different factors: households with more female members (labour), greater farm assets, better abilities to rent more forestland and higher social capital clear more forest.

The logging–shifting cultivation proximate cause of deforestation in the study area is strongly driven by both economic poverty and policy/institutional factors of forest governance in the DRC. Poverty is also linked to the political and institutional structures of forest governance. The lack of effective land use policy in the DRC, coupled with an inconsistency in the institutional structures of forest governance, influences how the forest is used and managed locally. Weak enforcement of the Forest Code and conflicting forest tenure, with the presence of multiple authority structures for the issuing of logging rights, opens more forest area for shifting cultivation. The lack of coordination among government ministries in the allocation of land concessions for logging, agriculture and the political actors' quest for economic growth further influence how the forest is used and managed locally.

The paper argues that a rigorous analysis of drivers of deforestation and the actors that have leverage to significantly reduce deforestation is necessary for clear policy responses and actions to curb deforestation as the country REDD+ strategy moves into its implementation. In this context, assessing the underlying causes that drive local land use and forest cover change is important in defining policies and actions to curb deforestation, rather than focusing on the one-dimensional perspectives of the driver, or proximate causes, as proclaimed in policy documents. The paper suggests that actions to curb deforestation must address underlying causes through effective land use planning; developing robust and accountable institutions; and offering alternative economic opportunities.

5.3   Competing tenures: implications for REDD+ in the Democratic Republic of Congo

Paper 3 addresses the issue of forest tenure, which is crucial in REDD+ implementation, by examining the challenges of implementing REDD+ in a context of legal pluralism, as with the case of the DRC. The paper employs an adapted version of the environmental governance framework developed by Vatn (2011) to analyse the institutional structures of forest governance

in the REDD+ pilots and the implications for REDD+. To understand how actors access forests or enforce their forest practices in the context of legal pluralism, the paper employs the institutional bricolage approach developed by (Cleaver 2002 2012). The paper uses information gathered from interviews, focus groups, field observations and policy document analysis.

The paper shows that the forest land in the REDD+ pilot sites are governed by both statutory and customary tenure. These two systems are not harmonised, creating a situation in which both the state and customary actors compete for authority over forests. The lack of harmonisation is based on the fact that colonial and post-colonial policies for forest governance were designed to substitute existing customary tenure systems with statutory tenure systems, in pursuing the creation of a modern economy based on market principles (Diaw 2005; Mamdani 1999; Unruh 2008). This transformation process resulted in conflicts between state agents and traditional leaders who controls access to the forests and resources. Hence, this created a situation of legal pluralism as the customary system resisted the transformation process. The paper demonstrates that in actual forest practice, actors draw on these two authority structures — state and customary — in legitimatising and enforcing property rights of forests at the local level (this was especially visible in the case of timber extraction). Given such an institutional landscape, actors engaged in forestry invent different ways of dealing with the plurality of power centers at the local level to ensure claims to forest resources — a phenomenon known as forum shopping (Meinzen-Dick & Pradhan 2002). Their abilities to choose which authority structure legitimatises their forest use depends, however, on the power resources they possess — material resources, knowledge and social relations. In such an institutional landscape, there are no effective checks on the powers of the elites, versus those of the poor and marginalised. Hence, actors with more power resources influence those who govern (see Samndong 2015).

How then can REDD+ be implemented in an institutional landscape with competing authority structures? From the findings, implementing REDD+ in the context of institutional pluralism is demanding, as different rights holders use different authority structures to legitimatise their claims to resources. From the paper findings, one way of addressing this is to formally recognise customary tenure of forest, since the local people attach considerable trust to this system. The recent enactment of the law of community forestry in August 2014 provides an opportunity for the formalisation of customary rights to forest land. Under this approach, the property rights

recognised are limited to use and control rights for a duration. This is determined as perpetual, but the procedures are under development. In addition, there are no functional local governments at the district and village levels.

In this context, REDD+ project organisers have facilitated the establishment of a new village organisation for REDD+ implementation. Based on the evolution of the project, it is still early to assess the effectiveness of the new village structure in the delivery of REDD+ outcomes. The representativeness and accountability relation of the authority structure in this REDD+ village organisation will greatly depend on the social processes and local power dynamics, and might influence the distribution of REDD+ benefits. This structure is different from the existing structure because it is established through a democratic process, while the existing structure is based on local norms and customs. These new established structures recognise customary landowners or authorities to head the executive committees of these REDD+ organisations. As a way of harmonisation, this might reinforce and empower the customary institutions to be democratically accountable; hence transforming local norms and customs to minimise the pluralist situation. The paper suggests that, if these authorities are not accountable to the local people, it may reinforce elite interests and the exclusion of some segments of the population.

5.4 Gendered forests: exploring gender dimensions in forest governance and REDD+ in Équateur province, the Democratic Republic of Congo

Paper 4 uses the gender lens to assess how women and men are included or excluded in the processes and outcomes. The paper conceptualises of gender participation in these interventions based on the bargaining power of men and women as the ability to influence or derive benefits in a given context, based on the action resources one possesses and the institutional arrangements available (Pandolfelli et al. 2007; Weinberger 2001). Action resources are the form of power resources — wealth, knowledge, information and social relations — actors (men and women) use in a given context to increase bargaining power. These action resources are sanctioned by the institutional arrangements (rules, norms, regulations) that determine how the actions unfold on the ground (Pandolfelli et al. 2007; Weinberger 2001). The institutional arrangements either constrain or constitute the bargaining process (Agarwal 1997). The paper applies the typology of participation articulated by Agarwal (2001) in assessing the

involvement of men and women in decision-making and benefit sharing in these interventions, and uses the theoretical insights of Agarwal (2001) to discuss factors that affect women's participations in the interventions, as compared to men's.

The paper shows that the gendered nature of knowledge, use and control over forests are not always recognised in forest governance and development initiatives. Although women's knowledge and use of forests is important, they have less voice than men, and occupy nominal positions in forest decision-making and benefit-sharing arrangements, compared to men. Women lack the resources to increase their bargaining power to influence decisions and benefits from forest governance and development initiatives. Existing social norms and perceptions, coupled with the dominant positions of men in rural settings, constrain women's bargaining power to be equally included in decision-making processes and benefit sharing from forest governance and development initiatives.

In the case of REDD+, while several policy measures and frameworks have been developed to mainstream gender dimensions into REDD+ initiatives to deliver effective and equitable outcomes, existing social norms and perceptions are the main obstacles to achieving gender-effective and equitable outcomes in the DRC. Women's limited access to information in the ongoing REDD+ pilot project further reduces their bargaining power. The REDD+ pilot project view of the household as a homogenous unit in the creation of REDD+ village structures further excludes women from REDD+ decisions. Moreover, women's participation in early REDD+ activities is constrained by the existing social norms and perceptions embedded in the participatory spaces.

The paper argues that understanding the circular nature of women's inability to participate in the project, due to social norms and low literacy and skills, is important. The reproduction of women's subordination within development interventions in general in the study area and the REDD+ in particular — as it specifically relates to land and forests — needs special attention. Although women and men may be able to influence change in institutions in their favour, women's lower level of power resources makes such outcomes more difficult to achieve. Thus, REDD+ actors should recognise the complex relationships between forests, gendered power dynamics, and REDD+ policies and practices, not only at the local level but also across the policy-making spectrum. This complexity of both gender and institutional change means that

favourable outcomes are not automatic. Making REDD+ gender transformative, however, depends on how REDD+ actors can be more effective in fostering gender equity by manipulating the action arena.

5.5   The participation illusion: questioning community participation in a REDD+ pilot projects in the Democratic Republic of Congo

Paper 5 questions the rhetoric of "full and effective" participation prescribed in REDD+ policy documents by assessing the extent of community participation in the process of REDD+ introductions in Équateur province. The paper conceptualises community participation as inclusiveness — the inclusion of people in decision-making, formulating plans, controlling resources and implementing decisions over their own lives (Agarwal 2001). The idea of inclusion evokes the relations of power that are embedded in the actors and structures designed for community participation. The paper applies the Arnstein (1969) typology of participation, analysing the extent of community participation in REDD+ introductions.

The paper shows that while the value of community participation is mainstream in REDD+ policy documents, the transformative dimension of participation as empowerment is undermined by relations of power, both among the actors and within the institutional spaces established for participation. From the findings, the institutional arrangement to enable full and effective community participation in REDD+ in the pilots is weak, and the mechanism used to establish this structure excludes women from participation. The lack of the bylaws and regulation in this structure, coupled with the lack of innovative ways of disseminating information about the project to the entire communities limits local peoples' abilities to demand representation and accountability from the leaders. The leaders are accountable to the project organisers who have empowered them with information and resources.

Using the Arnstein (1969) typology of participation, the paper shows that community participation in REDD+ introductions are characterised as 'tokensim': the communities were consulted and informed, but never achieved managerial power and influence over the REDD+ project. The information provided in the introduction process was not sufficient for the communities to make an informed decision to join REDD+ and the decision for the communities to join REDD+ was not democratic. The information provided focused on the

normative aspects of the project, while conflicting issues such as land rights, project risks and uncertainty were undermined. The control of information by the project organiser during the introduction process was a mechanism to transform the local peoples' perception, beliefs and thoughts about the forests. The project goals were predetermined and strategic decisions such as the project timeframes, budget, partnership and activities were made outside these communities. The communities have little or no control over the project activities and their participation does not go beyond labour supply in activities and attending meetings for per diems without articulating their voices and influencing decisions.

The paper argues that the notion of full and effective participation of local people in REDD+ implementation, as prescribed in the REDD+ social safeguard, might be difficult to achieve in practice, if social inequalities and local dynamics of power are not acknowledged and addressed. REDD+ — like other interventions — might further exacerbate these inequalities, adding insult to injury (Fraser 2008: 69) already being suffered by the more vulnerable segments of the local population. Community participation will continue to be instrumental in achieving project goals, without influencing the wider structural factors shaping these interventions.

6.0 Conclusion

The main objective of the thesis has been to increase understanding of the complexities of institutional choice and local participation in land use and forest policies aimed at protecting forest cover and improving forest base livelihoods. The thesis explores multiple sets of theoretical frameworks and methods to analyse development interventions and REDD+ implementation at the local level. The research questions were informed by contemporary academic and policy debates, such as those related to the negative social impacts of environmental policies at the local level and the comparative advantages of various institutional designs for analysing forest policy at the local level. At the same time, the research questions were motivated by a normative concern (the quest of enhancing participation and equity of resource access in rainforest countries) and a more pragmatic concern (i.e. the opportunity to study development interventions and REDD+ implementation and their peculiarities in Équateur province). In a similar vein, the research approach was not only informed by what was considered appropriate in light of an understanding of the phenomena to be studied, but by what was practically possible. Failure to pursue the BACI research approach designed at the beginning of the research made me focus more at the conditions for establishing REDD+ in the Équateur province and the initiated processes.

6.1   Main findings related to research questions

Paper 1 started by examining pervious forestry and development interventions in the Bikoro territory selected as a REDD+ pilot site, by assessing the ability of individuals and groups to influence and shape these interventions. The paper examined power relations and the accountability of local authorities involved in forestry and development interventions, to better understand the effects of these interventions on substantive citizenship. The study found that forestry and development agencies chose to partner with identity-based customary authorities and interest-based NGOs, in lieu of local state authorities and the absence of elected local governments. These chosen authority structures were not directly accountable to the local people, but their partnerships with higher level forestry and development agencies gave them public powers over resources. This placed them in a position of authority over those who used these public resources, in the absence of elected local governments. While these empowered

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local authority structures were open to some local influence, local people lacked the ability to substantively influence the decisions made by these chosen local authority structures; hence, they could not fully engage as citizens. The paper demonstrates that for REDD+ to achieve intended goals at the local level, local institutional structures established for REDD+ implementation must clearly reflect the social reality at the local level. The process of establishing such institutional structures should take into consideration existing relations of power, local norms and the social heterogeneity of the community.

Paper 2 questioned the one-dimensional view of the drivers of deforestation inherent in policy documents, by assessing both the proximate and underlying causes using an institutional analysis approach. The paper showed that agricultural expansion is the main proximate cause of deforestation in Équateur province of the DRC. Shifting cultivation is accelerated by logging that simplifies clearing of land by opening up the forest. Shifting cultivation is driven by the poverty conditions of the study area. This poverty is linked to the political and institutional structures of forest governance. These structures are controlled by political elites who influence local decisions to clear forests. The study suggests that actions to curb deforestation must address underlying causes through effective land use planning, developing robust and accountable institutions, and offering alternative economic opportunities, while promoting political empowerment of the local population.

Based on this insight, paper 3 examined existing forest tenure in Équateur province critical for REDD+ implementation. The paper showed that the forest was governed by two competing tenures — statutory and customary —that were not harmonised. Such an institutional landscape created opportunities for actors to 'shop' between the two systems in legitimatising their expanded use and control over forest resources. Such an institutional landscape was vulnerable for ensuring an effective REDD+ regime, and may negatively affect the distribution of costs and benefits associated with REDD+. The paper further assessed action taken by early REDD+ initiatives to ensure an effective REDD+ regime at the local level, in the absence of functional local governance structures. It showed that REDD+ organisers are establishing new village organisations for REDD+ using mechanisms to harmonise the customary and democratic structures. This illustrates problems with establishing a legitimate and functional REDD+ regime in the DRC.

Papers 4 and 5 focused on participation in forest governance and REDD+ introductions. While Paper 4 used a gender lens to assess the participation of men and women in forest governance and REDD+ piloting, Paper 5 assessed community participation in the process of establishing REDD+ piloting. Both papers applied different analytical frameworks to assess participation in interventions at the local level. The gender paper adopted the analytical framework of participation articulated by Agarwal (2001), while the fifth paper adopted the analytical framework of participation articulated by Arnstein (1969). These analytical frameworks characterised the type of participation involved in these interventions and the relation of powers embedded in the spaces established to enable participation.

The gender paper showed that men and women have different knowledge and uses of forests, but that these differences are not given due consideration in forest governance. Women's voices are often muted in decision-making arenas, and they occupy only nominal positions in both forestry and development initiatives, compared to men. This status quo is extended to the REDD+ pilot projects as well. Women have limited information about REDD+ compared to men. The mechanisms used to establish new village organisations for REDD+ exclude women from decision-making in the ongoing REDD+ pilot project. The study shows that women's bargaining power for equal inclusion in decision-making processes and for sharing benefits are constrained by existing social norms regarding local access to land and material resources, existing gender division of labour, local perceptions regarding women's roles and contributions/responsibilities, as well as men's dominant positions in rural settings. For a gender transformative REDD+, the study suggests that REDD+ actors should attempt to bring about institutional change that transforms gender relations, and thereby increases women's bargaining power.

While full and effective participation of the community is enshrined in the REDD+ social safeguard policy document, the paper showed that this policy discourse about participation is mostly rhetorical. The community participation in REDD+ introductions is limited to 'tokenism', with the communities consulted and informed, but never achieving managerial power and influence over the REDD+ pilot project. The decision for the communities to join REDD+ was not democratic and the information provided during the introduction process was not sufficient for the community members to make informed decisions about joining REDD+.

The community members had little or no control over the dissemination of information and the project activities; hence, their participation did not go beyond labour supply in activities and attending meetings for per diems. The institutional arrangement established to enable full and effective community participation was weak and excluded women. The paper suggests that the full and effective community participation advocated in the REDD+ policy discourse might be achieved only if sufficient insights into local social values, equalities, norms, conflicts and relations of power are acknowledged and addressed.

6.2   Significance and contribution of the thesis

The empirical contribution of this thesis points to the fact that environmental policies and interventions are often designed with an inherent motivation to predict outcomes. Yet the effects of these policies and interventions are not linear and predictable, as unexpected outcomes often result. The reality — at the local level — is that communities receiving these interventions are not homogenous, but bound by social values, norms, social structures, relation of powers and conflicts. This empirical contribution is reflected in the different papers that made up the thesis, with key points now highlighted. It is understood that:

1.   The accountability relation of local institutional structures recognised in forestry and development interventions are often skewed by local power relations, and the processes that create them are crucial for effective and equitable outcomes from these interventions.

2.   The one-dimensional view of the drivers of deforestation are limited for policy action to curb deforestation. The drivers of deforestation are contextual and occur as a result of complex interactions involving a multitude of proximate and underlying forces that cannot be reduced to a single explanatory factor.

3.   It is difficult to implement REDD+ in a context of institutional pluralism, especially when these institutional structures are not harmonised. Tenure security and conflict over forest access and use are important concerns to be addressed for REDD+ to be effective and legitimate at the local level.

4.   Mainstream gender dimensions into REDD+ initiatives are essential to deliver effective and equitable outcomes. Making REDD+ gender transformative will require changes in institutions, due to the complex relationship between forests, gendered power dynamics, and REDD+ policies and practices.

There is also an understanding that the notion of full and effective participation of local people in REDD+, as prescribed in the REDD+ policy document, is rhetorical. For such participation to occur in practice, local people need to be empowered to have a voice in acknowledging and addressing exiting social inequalities and local dynamics of power. This process requires time to understand the local social reality, and to build capacity and general trust.

The significance of the thesis for policies and society is very concrete. The main findings and recommendations are relevant for REDD+ policy action in Équateur province and the DRC in general. As the DRC REDD+ national strategy and investment plan is being considered for implementation, with Équateur province selected as one of the provinces for the REDD+ integrated programme, the findings and recommendations are important to guide such a process. The thesis has societal relevance for Norway, the European Union and the DRC. It should be noted that Norway and some European Union countries are at the forefront of providing financial support to the DRC national REDD+ strategy, through the Central Africa Forest Initiative to reduce deforestation in the Congo Basin region. As the thesis evaluates the local realities of early REDD+ pilot projects in Équateur province, it delivers knowledge that is essential for future REDD+ investment programmes in the province with importance for the donor countries and the DRC.

Finally, the PhD research has had a significant impact on the author as a researcher and a person. During these five years, the author has acquired knowledge and skills, built networks, and collected valuable experiences that will stay with them.

6.3   Future research

The empirical research conducted in Équateur province and the evaluation of institutional choice and participation in forestry intervention and REDD+ implementation holds many data for further analysis, and leaves several questions unaddressed. The research project, at the beginning, was designed to follow a BACI approach, but due to some interruptions with the

REDD+ pilot project, it was difficult to continue with this approach. This left many unanswered research questions, such as the costs of establishing REDD+ and the impact of REDD+ on local livelihoods and deforestation. As the project resumes its activities, it is important to pursue these research questions, especially now that many donor countries are at the forefront in supporting the DRC national REDD+ strategy and investment plan. In turn, many interesting themes besides (but related to) governance and participation are worthy of further analysis and discussion, such as forest dependency and livelihoods, activities adopted to curb deforestation, the equity in REDD+, social safeguards for marginalised ethnic groups (Batwa Pygmies), REDD+ and community forestry, as well as the overall local legitimacy of the REDD+ implementation.

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PART II

COMPILATION OF PAPERS

PAPER 1

Institutional Choice and Fragmented Citizenship in Forestry and Development Interventions in Bikoro Territory of the Democratic Republic of Congo

Raymond Achu Samndong

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Institutional Choice and Fragmented Citizenship in Forestry and Development Interventions in Bikoro Territory of the Democratic Republic of Congo

Raymond Achu Samndong

Department of International Environment and Development Studies, Norwegian University of Life Sciences, Ås, Norway

Substantive citizenship is the ability of an individual to influence those who govern. In order to assess this 'ability', this study examined the powers of sanction possessed by individuals or groups and the accountability mechanisms at their disposal in three villages in the Bikoro Territory of Democratic Republic of Congo (DRC). More specifically, the article examined power relations and the accountability of local authorities involved in forestry and development interventions, in order to understand the effects of these interventions on substantive citizenship. The study found that forestry and development agencies chose to partner with identity-based customary authorities and interest-based non-governmental organizations in lieu of local state authorities and the absence of elected local government. These chosen institutions are not directly accountable to the local people, but their partnership with higher level forestry and development agencies gave them public powers over resources. This placed them in a position of authority over those who use these public resources in the absence of elected local government. While these empowered local institutions are open to some local influence, local people lack the ability to substantively influence the decisions made by these chosen local institutions – hence they cannot fully engage as citizens. This case study suggests that recognizing identity and/or interest-based local institutions by agencies currently promoting carbon forestry in the DRC exacerbates existing unequal power relations and further narrows inclusive local democracy and effective community participation in decision-making processes.

Keywords: citizenship; influence; forestry; identity; development interventions

Introduction

Citizenship is typically understood formally as the equal and undifferentiated enjoyment of civil rights tied to nationality (Leca, 1991). In this sense, citizenship is the incarnation and the enjoyment of a set of political, civil, economic, social, and cultural rights. Although this formal-legal meaning of citizenship is linked to civil rights and membership in a nation state, how it is experienced and expressed in practice is

more complex (Kabeer, 2005). Concern with the substantive manifestation of citizenship has led to an empirical definition of citizenship by Ribot (2011) as the ability to influence those who govern. The right and ability to influence projects are a critical element of local democracy – democracy requires that local people are able to influence and shape the decisions of those in power (see Ribot et al., 2008). This article is informed by this substantive definition as it enables the concept of citizenship to be broken down into measurable variables. This substantive definition does not contradict but complements and enhances the legal definition of citizenship. The substantive definition linked citizenship to the power relations that constitute and reconfigure its values and practices in any given society (Mouffe, 1993).

This article explores the effects of recognition by intervening forestry and development agencies on substantive citizenship. It asks the following: (a) what forms of inclusion or exclusion are produced and/or reproduced when state agencies and international non-governmental organizations (NGOs) accord recognition to both identity and residency-based local institutions? (b) How would these forms of inclusion or exclusion shape representation and equity concerning decisions in forestry and development interventions in the case study area?

The article shows that via recognition, village-level institutions (customary institutions and peasant development organization) are accorded powers and resources in forestry and development interventions, respectively. While these chosen village-level institutions and authorities are open to some influence, majority of the villagers lack the ability to influence these authorities and demand accountability, due to their lack of information, material resources, and adequate platform to articulate their needs. Majority of the villagers' ability to define and articulate their needs and to engage substantively to shape the agenda or actions of these interventions is highly skewed by the inequalities in access to resources and opportunities in the study area.

The article is divided into seven sections. Following the introduction, Section 2 provides the theoretical framework of the article through a discussion of the different definitions of citizenship (liberal, communitarian, and republican) and their relations to power and access to material resources. Section 3 shows the geographical context and the research methods used for the study. Section 4 is an overview of the legal and policy framework of land, forests, and rural development in the Democratic Republic of Congo (DRC). It shows that land and laws in the DRC transfer power and resources to customary authorities. The agricultural policy reform has created the Agricultural and Rural Management Councils (CARGs) to manage rural development projects, but this local institution does not exist in Bikoro. Section 5 presents the findings of the article – it shows that the Bureau Diocésain de Developpment (BDD), a NGO of the Roman Catholic Church, is the main development agency working to improve the livelihoods of people in Bikoro, the study area. It also shows that BDD has chosen Organisation Paysanne de Development (*Peasants Development Organizations in English*), hereafter referred to as OPD, to implement rural development projects in Bikoro, while the customary authorities are recognized in the management of

logging compensation. It shows, however, that the social differentiation within these local institutions enables some groups to enjoy the benefits of these interventions and influence those who govern. Section 6 focuses on analyses and discussion. It argues that for certain groups – Pygmies,[1] women, and the poor – to exercise substantive citizenship, interest-based development institutions such as the BDD and other recent NGOs in Bikoro have to promote inclusive local democracy through an effective community participation in decision-making processes. Section 7 concludes the article with a summary of its findings and discussions.

Conceptualizing citizenship

The rights to participate in public affairs and the role of the state to protect citizens in the exercise of these rights are central to the liberal thought of citizenship (Gaventa, 2002). The actual exercise of these rights according to Isin and Wood (1999) is a choice of a citizen, but this assumes that the citizen has the resources and opportunities to do so. Mouffe (1993) argues that liberal theorists of citizenship are blind to the relations of power, showing little concern to the ways in which the identities of citizens are affected by power relations, and political practices of inclusion and exclusion. In contrast to the liberal tradition, the communitarian notion of citizenship is socially embedded on community belonging – an individual's sense of identity, a form of citizenship, is produced through relation with others in the community to which the individual belongs (Gaventa, 2002; Jones and Gaventa, 2002). In contrast to the communitarian tradition, the civic republican tradition places emphasis on people's political identities in nation states and not on their ethnic identities from their localized communities (Gaventa, 2002; Mouffe, 1993).

In the context of this article, citizenship extends beyond the liberal notion of the right to participate in public affairs, and it is defined as the 'ability' to be politically engaged and shape the fate of the polity in which one is involved (Isin and Turner, 2002). Local citizenship, then, is the ability of individuals or groups to substantively influence local decision-makers. Citizenship in this context is related to the concept of accountability – the counter-powers that connect local decision-making authorities and the local population (Agrawal and Ribot, 1999). As Gaventa (2002) argues, citizenship is mediated by relations of power, social hierarchy, and often competing identities, which serve simultaneously as a force for the inclusion of certain voices and identities, and the exclusion of others.

Power, according to Rogers (1974, p. 1425), is defined as 'any attribute, circumstance, or possession that increases the ability of its holder to influence a person or

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[1]The term 'Pygmy' is pejorative in some contexts. I choose to use the term in this paper because it is well known by the people in this region and clearly indicate the group I am talking about. The Pygmies in this region belong to the ethnic group Batwa and they are also referred to as *Peuples Autochtones* (PA) in French, which means indigenous people.

group'. Benjaminsen and Svarstad (2010, p. 20) consider power as 'the performance of intentional action by one or more actors in relation to other parties that contributes to the maintenance or alteration of resources in a way that to some extent or entirely is in accordance with their intentions'. This definition agrees with Lukes' (2005) three-dimensional approach of power, which maintains that power must be intentional, relational, and should generate results.

Power resources are forms of capital that different actors possess to a greater or lesser extent, and which they could potentially use to influence and achieve their will (Benjaminsen and Svarstad, 2010). Power resources that actors may possess and eventually utilize include economic power, financial power, property/user rights to land and natural resources, political power, influence on governmental institutions, discursive power, power through knowledge, power through the exercise of violence, and the weapons of the weak (Benjaminsen and Svarstad, 2010). Power and resources shape the way higher level authorities engage with local populations in interventions and also shape the ability of the population to exert their influence on higher level authorities through accountability mechanisms (Ribot et al., 2008).

Similarly, 'access' defined by Ribot and Peluso (2003, p. 153) as 'ability to benefit from things – including material objects, persons, institutions and symbols' affects substantive citizenship. Where people have access to a resource, they would be motivated and empowered to influence how the resource is governed. Ribot and Peluso (2003) relate 'ability to benefit' to power, and explain power firstly as the capacity of some actors to affect the practice and ideals of others, and secondly as emergent from intended and unintended effects of social relationship. Ribot and Peluso (2003) assert that mechanisms, structures, and processes supporting access serve both its maintenance and control. Maintenance is about expanding resources or power to keep access open for one's self or others; control is the ability to mediate others' access – that is, control is about power over others (Ribot and Peluso, 2003). It should be noted that 'access' and 'use rights' are not the same; an individual may have customary or statutory user rights to forests and still be denied access due to power relations on the ground.

In this article, Benjaminsen and Svarstad's (2010) concept of power resources, and Ribot and Peluso's (2003) concept of access are used to assess rural citizenship in the DRC. Together these theories help us understand the mechanisms and means through which people are able to access and influence those who govern. The article uses the different forms of power resources and access mechanisms to analyze the different forms of inclusion and exclusion that emerge from the recognition of local institutions by forestry and development agencies in Bikoro territory.

Geographical context and research methods

This study was conducted in three villages, Ikallanganya, Buya 1, and Kalamba, situated in Secteur of Elanga, northern part of Bikoro Territory, in Equateur Province in the

DRC (Figure 1). Equateur province has a total area size of 403,292 km^2, equivalent to the size of France, and hosts 28 percent of the total forest area in the DRC (UNDP, 2009). Bikoro is situated in the southwest of Equateur Province, lying within the largest track of swamp forests in the world (UNDP, 2009), making road construction and maintenance difficult (Yamba, 2009). The territory is sparsely populated with a density of 18 people per km^2 (Klaver, 2009). The population relies heavily on the forest for their livelihoods by practicing swidden agriculture, extraction of non-timber forest products, fishing, hunting, and charcoal production (Du Preez and Sturman, 2009; Gray, 2012; Klaver, 2009).

Culturally, Bikoro Territory is made up of two main ethnic groups: the Bantu and the Batwa Pygmies. The Bantu group is subdivided into three different groups: the Mongo, Ntomba, and Ekonda, and other migrant groups. The Mongo is the major group in the north of the territory including the study area, while the Ntomba and Ekonda are the major groups in the south of the territory. The Mongo group occupying the study area are considered as the main indigenes (ayant droit) with customary claims to land and forest. The Batwa Pygmies made up about 20 percent of the population in Bikoro territory, but are considered as strangers in the study area with limited rights to land and forest.

This research site was chosen because Bikoro territory has experienced many projects related to agricultural development and forest governance (Klaver, 2009), such as the International Union for the Conservation of Nature (IUCN) project on 'Strengthening the Voices for Better Choices' (Du Preez and Sturman, 2009; Klaver, 2009). Presently, the DRC government has selected the area as a pilot site for the Reducing Emissions from Deforestation and Forest Degradation plus its accompanying co-benefits (REDD+) project. Given the discussions on social safeguards to avoid negative impact of REDD+ on local people (UNFCCC, 2011; UN-REDD, 2011), there is a need to understand how past forestry and development projects have affected rural citizenship in Bikoro. Thus, lessons from this study would be useful for the REDD+ project, and also for any other future forestry and development interventions in the area.

This article focuses on the interventions of the Roman Catholic Church Development Bureau, BDD, in the study area. BBD carries out rural development projects, capacity-building initiatives, and agricultural projects. BBD has been chosen by Woods Hole Research Center (WHRC) in the USA as a key partner in the REDD+ project in Bikoro. BDD is thus a primary actor in the formation of rural citizenship in Bikoro.

The field research was conducted in May–June 2012, and from November 2012 to January 2013. Information was obtained through interviews, focus-group discussions, and field observation. A total of 123 people were interviewed from five categories of actors: customary authorities, local state administrators including staff of the Ministry of Environment (at the local and regional level), provincial Parliamentarian, staff of BDD, and other intervening NGOs (Cercle pour la Defense de l'Environnement (CEDEN), Food and Agricultural Organization, World Food Program, and Oxfam)
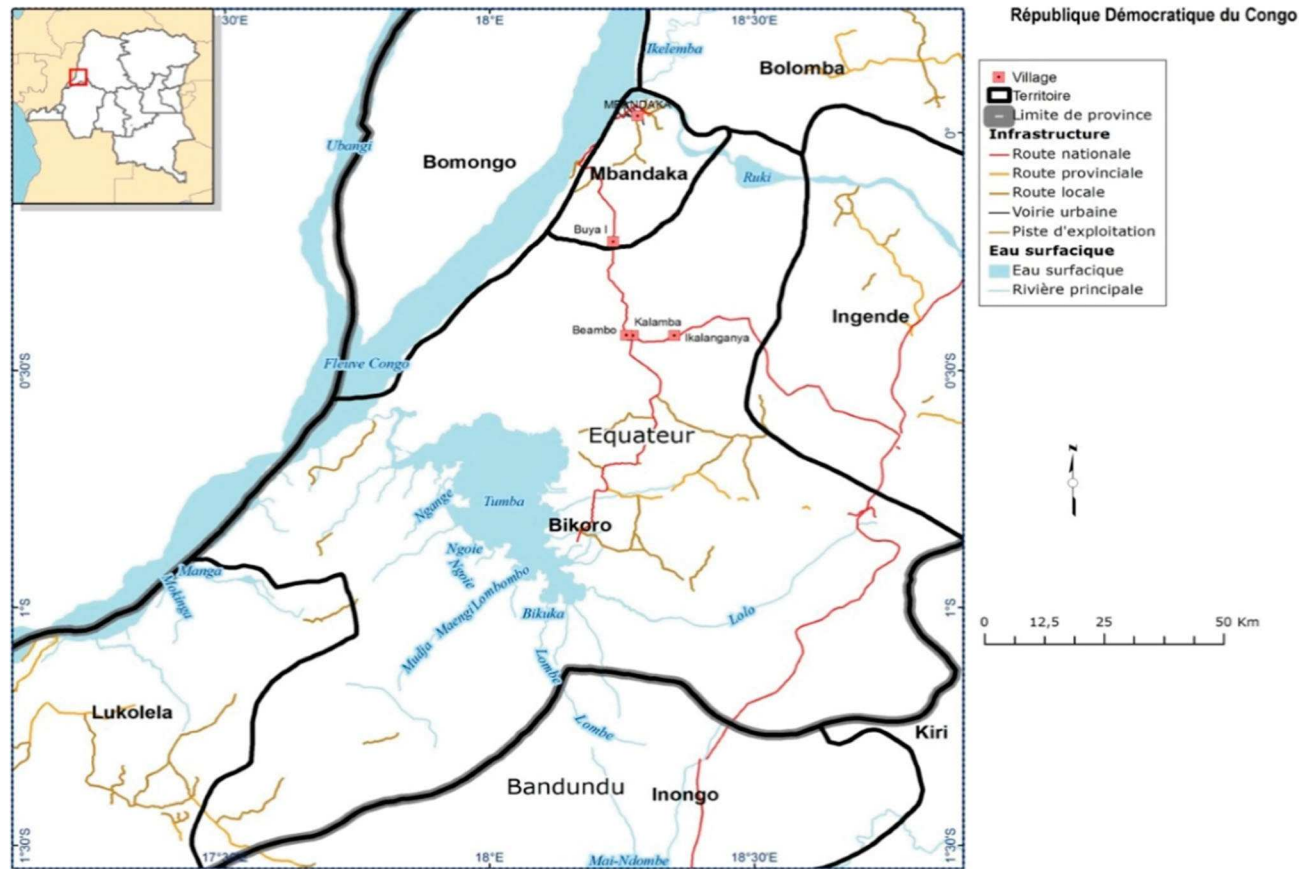
Figure 1:   Map of Equateur province showing the study area in Bikoro territory.
Source: Gregory Fiske, Wood Hole Research Centre, 2013.

operating the villages and the executive members of the OPD. The intention was to gather information on the power and resources transferred to the local institutions, how these powers and resources have enabled these local institutions to engage the local population in local decision-making processes and implementation, and the forms of accountability produced in these interventions.

To capture the villagers' insights on their inclusion or exclusion in forestry and development interventions and their ability to influence village institutions recognized by BDD, I organized a total of 15 focus-group discussions with 5 focus groups in each of the villages I studied. The focus groups considered issues related to access to power, rights, and resources. Information about the villagers' participation in project activities, the distribution of benefits, and their interactions with the local authorities and the executive committee of the OPDs were also collected in the focus groups. Wealth-ranking exercise was used to categorize the villagers into different socio-economic groups based on the wealth indicators in the village provided by the villagers.[2] Based on my assessment, three categories were obtained after the exercise: the poor, the middle class or better off, and the well-off or rich in the village. These wealth indicators were used in the ranking exercise to categorize the villagers into these three groups. Since material resources are attributes of power in the local arena, the wealth-ranking exercise provided an opportunity to discover the villagers' level of influence in these interventions based on their material resources. In addition, I ranked the power resources and mechanisms of access on a scale of $1-5$ of the different actors interviewed and the groups selected for the focus-group discussions. The scaling was used to have some quantitative representation of the power resources and mechanisms of access used by the actors and groups interviewed to exercise influence or demand accountability.

The Pygmies, who tend to be socially and economically subordinate to the Bantu, and women were then grouped separately for additional discussions to capture their insight as marginalized groups concerning the above issues. These two groups were not well represented in the socio-economic groups above and they are often reluctant to voice their feelings and perceptions in front of their Bantu neighbor and the men. In all, there were five focus groups: poor, middle class, better off, women, and Pygmies. Each of these groups were made up of 12 persons. In addition, field observation was also used concerning the availability and quality of social infrastructure such as roads, schools, health care, and community projects; access to land, information and material resources; and the villagers' mode of engagement in meetings. The most pertinent observation from fieldwork was that land and forest were extremely important

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[2]Wealth indicators used include size of farmland and total number of land parcels, material used in roofing the house, material used in house construction, households physical assets (house, motor bikes, mobile phones, bicycles, TV, radios, generator, solar panel, plastic chairs, and farm tools), number of wives, number of livestock (goats, pigs, and chicken), number of children in schools, fishing nets, and canoe.

in shaping social relations in Bikoro. The next section of this article therefore provides an overview of land and forest tenure in the DRC.

Legal and policy framework in the DRC

This section presents the legal and policy arrangements concerning land, forest, and rural development that transfer powers and resources to local institutions in the DRC. Access to land and forests is a strong indicator of power at the local level in the DRC (Mamdani, 1999). Since independence, the DRC has introduced successive laws governing land and forest: the Bakajika Law of 1966 that declared all land (including land under customary control) property of the state and the 1973 General Property Law (Huggins, 2010; Leisz, 1998; Oyono, 2011; Seyler et al., 2010). The 1973 law was part of the government's nationalization policy, through which political loyalty was rewarded with distribution of land. The law undermined customary land-tenure arrangements and paved the way for new types of relations based on state patronage. The result was that members of political alliances at both local and national levels benefited from the redistribution of nationalized plantations and customary authority landholdings (Leisz, 1998; Vlassenroot, 2006). This significantly impaired access to land for certain segments of the population, particularly the people called pygmies, women, and the poor. The land policy limited the ability of members of these population groups to accumulate wealth through gaining control over land (Hoare, 2006; USAID, 2011).

Despite the establishment of state ownership of all land in the DRC, in practice a significant portion of the land remains subject to customary law (Akwah and Yoko, 2006; Klaver, 2009; Oyono and Nzuzi, 2006; Samndong et al., 2011). Customary chiefs, heads of family groups with traditional landholding rights (*ayant droit*s),[3] continue to regulate access to land (Leisz, 1998; Vlassenroot, 2006). A new Forest Code was enacted in 2002 under external donor pressure, but failed to resolve the inconsistency in the land-tenure system and continues to assert state ownership over all forest land (Counsell, 2006; Debroux et al., 2007; Du Preez and Sturman, 2009; Fetiveau and Mpoyi, 2009; Trefon, 2008). Article 44 of the Forest Code states that communities' customary use rights are maintained in logging concessions but outlaw commercial or farming activities, and any use deemed incompatible with logging activities (GDRC, 2002).

Article 89 of the Forest Code, as well as the code's application decrees, require logging companies to contribute to the development of local populations living around forestry concessions through the provision of infrastructure and social services (GDRC, 2002, article 89). The Code mandates that companies sign what are called 'social agreements' (*cahier de charge* in French) with these communities as part of

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[3]These are families with traditional landholding rights separate from lands under the control of the customary chief.

the companies' forest management plans. The Forest Code provides a model for these agreements defining what should be negotiated between the parties, and, to a certain extent, how the negotiations should be carried out (*Arrêté* 028, 2008). The Forest Code also gives customary authorities the right to negotiate this social agreement with the logging companies, on behalf of their local communities. In addition, a ministerial text (MECNT, 2010, *Arrêté* 023) institutionalized the creation of *Comité Local de Gestion* (CLG), known in English as Local Management Committee, to negotiate and manage compensations from logging concessions around the villages (I later call this the Local Management Committee for Logging Compensation). This administrative text further recognized customary authority as the main supervising institution for the CLG.

The DRC has also embarked on several reform processes in an effort to increase economic development by rebuilding its agricultural sector. As part of this reform process, the government is restructuring and decentralizing its Ministry of Agriculture, Fisheries, and Livestock (MINAGRI) and Ministry of Rural Development to be efficient and responsive to the needs of the population (BTC, 2008). In addition, the government has set up CARGs, at the territory, provincial, and national levels as platforms for discussions, information sharing, and designing of local agricultural strategies involving various actors in rural areas including members of local assemblies and governments, private sector, unions and associations of producers, universities, and research centres, and civil societies at large (Badibanga et al., 2013; Ragasa et al., 2011). The CARGs is a multi-stakeholder platform, but this platform has not yet been established in the study area. Intervening NGOs therefore partner with Peasants Development Association (OPD) created based on the law of association (Loi de l'Association, *N° 004 du 20 juillet 2001; décret de 1956 sur coopératives*) to implement rural development projects.

The land and forest laws in the DRC, therefore, transfer powers and resources between the state and the customary authorities. In the context of these land laws and controlling institutions, I will examine how access to land and forest shape local peoples' abilities to influence those who govern. The CARGs, a new local institution created from the agricultural policy reform process to empower village farmer groups on agricultural and rural development projects, does not yet exist at the sector level and in the study area.

DRC legislated the creation of elected local governments through a 2006 decentralization reform (GDRC, 2006). This reform, however, has yet to be implemented and therefore there is, as of yet, no elected local government in the DRC (Klaver, 2009; Samndong et al., 2011). There are local state administrators that represent the interests of the state. The village administrative chief is part of the local state administrators. This is an executive nominated by the villagers and appointed by the local state authority to enforce state laws in the village and report to the administrative authority.

Impact of forestry and development interventions on rural citizenship in Bikoro

This section examines how forestry and development interventions affect power resources and access to land and forest resources in Bikoro, and how this shapes local peoples' abilities to influence those who govern Bikoro. The section is in three parts; the first part presents the local institutions in the villages studied; the second part shows the power resources available to the local institutions due to recognition by higher level institutions; the third part shows how the reconstitution and reconfiguration of power resources shape access and local people's ability to influence those who govern them.

The local institutional landscape

In the absence of an elected local government, four local institutions were identified in the study area (see Table 1). These are local state administrators (*Administrateur de Territoire, Chef de Secteur*, and *Chef de Localité.),* customary authority, OPDs, and the management committee for the social agreement with logging companies. Detailed explanations of these institutions are provided below.

Local state administrator

The territorial administrator, district administrator, and village administrative chief are all government agents who exist in the study area but are not formally involved or recognized as partners by higher level forestry and development agencies. They function as government representatives and are always invited to meetings and consultation processes. With their executive powers, they however still exert some level of influence in local project activities. The village administrative chief is the local state authority representing the state at the village level. The administrative chief is an executive nominated by the villagers and appointed by the local state authority to enforce state laws at the village and report to the administrative authority. The power of the village administrative chief conflicts with that of the customary chief especially on issues related to land allocation. I will describe these overlaps and conflicts in the next section.

Customary authority

The customary authority in the study area includes the head chief of the main ethnic group (*chef de groupement*), the village customary chief (*chef cuotumier*), the notables (the head of the main families in the village), and the indigenes of the village (*ayant droits*).[4] The main ethnic group in the study area is Bofidji-west (of Mongo origin)

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[4]These are groups of families recognized under the customary system of land allocation as the rights owners who control access to land and forest resources and should have direct benefits from any forestry intervention or any investment on the land. Under the customary system

Characteristics	Local institutions			
	Local state administrator	Customary authority	Peasant development organization (OPD)	Local management committee for social agreement in forestry concessions
Functions	Represent the state at the local and involve in decision-making of state delivery services	Control and manage access to land and resolve local land conflicts	Function as platform for agricultural delivery service in the village	Manage local development fund setup through social agreement (contract between loggers and villagers)
Decision-making structure	Line ministries/provincial governor	Traditional council that is made up of the customary chief and Notable (head of family groups)	Elected executive committee/ general assembly	Elected local management committee/local review committee
Jurisdiction	The territory/Sector	Village and ethnic groups	Sub-village	Village-wide
Relationship with administration	Gubernatorial decrees/rulings/ law	Recognized by the Forest Code	Formal registration with the chief of Secteur	Ministerial decree/ruling, convened by the chief of Territory
Support/partner	The state and NGOs	The state, NGOs	International and national NGOs, development/donor agencies	Chief of Territory, Timber companies; NGO observers (Global witness, RRF, FPP, CEDEN, RNN)
Funding structures	From the state	None	Membership fees	10% of revenue from development fund
Accountability mechanism	Upward accountability to the upper level of the administration	Ideological motivated (norms and culture)	Voluntarily accountable to members or villagers and upward accountable to the supporting NGOs	Predicted to be accountable to the villagers but yet to be implemented in the study area
Local inclusion	Residence based	Identity based on ethnicity	Interest based on membership	Residence based with elected representative

Table 1: Characteristics of existing and emerging local-level institutions in the study area.

and comprises 32 villages. The head chief of this main ethnic group controls all the customary chiefs in these villages and he is recognized by the state as representative of the customary authority. All the three villages studied have customary chiefs and notables. The customary chief regulates day-to-day access to land and forest resources at the village level and resolves local-level conflicts related to forest and land use. The notables control access to village family land and report to the customary chief.

In the three villages studied, the customary chief is the main intermediary for the negotiation of the social agreement and the document specifying the rules and work plan (*cahiers des charges*) with logging companies at the local level. This is based on the 2002 Forest Code (articles 44 and 89), the 2006 Constitution (articles 34 and 56), and *Arrêté* 023 issued by the Ministry of Environment on 7 June 2010.

Peasant development organizations

The OPDs are intra-village voluntary organizations that combine informal and formal elements of collective action in coordinating development-oriented agricultural service delivery and other village development projects. They often operate as a platform through which national and international development organizations can train villagers and supply materials to improve agricultural production and other development activities in the villages.

OPDs exist in the three villages studied. These OPDs are registered and have a legal status.[5] Membership of the OPD is open to everybody living in these villages and membership is based on a membership fee of an equivalent of 1 USD and a monthly contribution of 0.5–1 USD. Members of the OPD have as a duty to participate in meetings and engage in activities.

The executive members of the OPD are elected from the general members with four years renewable term of office. To be an executive member of the OPD in all the three villages, some criteria are required: ability to read and write in French; speak well in public; have certain power resources (physical assets and level of education); command respect in the village; and be able to protect the interest of the village. The executive members constitute the final decision-making body of the OPD, oversee all the activities of the organization, organize village meetings once per month, and call for emergency meetings if the need arises. One of the executive members of the OPDs said, 'The general assembly of the OPD is the main decision-making body.

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this constitutes mostly the men since women do not inherit land in these villages. The issue of ayant droits is very complicated in the study area; at what time in history should a family establish customary claim to land is difficult to estimate. The Pygmies are commonly known as 'peuples autochtones' in this area but are not ayant droits. In addition some villages such as Buya 1 were created during the construction of commercial roads by the Belgians in the late 1920s.

[5]*Organisation Paysannes* (Loi de l'Association, *N° 004 du 20 juillet 2001; décret de 1956 sur coopératives*).

Participating in meetings is very crucial in making your voice to be heard in decision making matters' (Interviewed in Buya 1, December 2012). Four of the executive members also confirmed this statement.

In Buya 1, the OPD studied was created in 2004 and the executive body is made up of 11 members (with 2 women and 1 Pygmy). In Beambo-Kalamba the OPD was created in 2006 and the executive body is made up of 18 members (with 2 Pygmies and 2 women). In Ikallanganya, the OPD was created in 2009 and the executive body is made up of 13 members (with 1 Pygmy and 2 women). All non-Pygmy members are called Mongos. The executive members of the OPDs in the villages, as noticed from field observation, are local famers with large landholdings by the village standard (usually above five hectares), teachers, businessmen, pastors, nurses, agronomy workers, the customary chief, and local administrative chief.

Although all the OPDs studied are legally recognized by the local state authorities, they do not represent the interest of the entire villagers. They represent the interest of their members, especially those that are actively involved through regular payment of member fees and attending all meetings. From field observation, the general membership of these OPDs consists of villagers with common interests such as farmers' groups or local elites with interest in development initiatives. The president of the OPD in Buya 1 indicated that there were over 30 members in the OPD when it was officially created in 2004 but by 2012, the OPD records indicated only 25 members. In addition, since its creation only the post of the treasury has witnessed a change of office holder.

All the OPDs discussed above are recognized by BDD to implement their activities in these villages. Some of the OPDs in the villages were created with the assistance of BDD. An official of BDD interviewed stated that:

> As part of our capacity-building initiative, we have assisted some of the villages to create the OPD. We think this is the best way to promote participation in the villages and to ensure that the [project] benefits are distributed to all. (Interviewed, 4 June 2012)

According to the BDD, working with the OPDs was the best means to engage the villagers to participate in village development projects. The reason being that the OPD is a village association made up of the villagers and the executives are elected by the members, hence they should be accountable to the members. Apart from choosing the OPDs, BDD also appoints local focal points in all the villages where it intervenes to monitor and report the activities of the OPD it supports. Given that BDD assists in the creation of OPDs, and recognizes OPDs are their partners at the village level, BDD can be considered the primary benefactor of the OPDs.

Local management committee (CLG) for logging compensation

The CLG for negotiating the social agreement with logging companies has not yet been established in the three villages studied, though they exist in other villages in Bikoro territory. The local management committee (CLG) was institutionalized by Arrêté

023 issued by the Ministry of Environment Nature Conservation and Tourism (MECNT). According to the ministerial text (MENCT, 2010, *Arrêté* 023), the CLG should be made up of one representative from the logging company and at least five elected representatives of local communities whose territory, specified under customary tenure laws, overlaps with the concession where logging is taking place. The president of the CLG is an elected member of the local community and acts under the supervision of customary authorities of these communities. The Arrete 023 does not specify the supervising role of the traditional authorities in CLG. It does not also specify how this election should be conducted and since this local-level institution is not yet in existence in the villages studied, I did not study how elections into the CLG has been organized in those villages where it is operational. Any interested civil society organization can attend local community and CLG meetings as an observer. The decree also requires that the local administrative authorities engage in the negotiation process of the social agreement with logging companies.

Powers and resources

This section shows the power and resources transferred to the operational local institutions in the study area, due to their recognition by higher level institutions. The higher level institutions in this instance are the government of the DRC, and the BDD.

Power and resources of the village-level state administrators

Although customary chiefs are accorded the power to negotiate the logging compensation agreement, their powers are in conflict with that of the village administrative chief (*chef de localité*). The role of the village-level state administrator is thus to constrain the powers of customary chiefs over village affairs. The administrators' powers trump those of the customary chiefs.

Presently, there is a new police post at Kalamba village; this is an additional state administrative presence at that level. This further diminishes the power of customary authority. A customary chief interviewed spoke about his diminished role due to the presence of state agencies.

> My authority as the customary chief has been greatly reduced by the presence of the police post in the village. Land conflicts among families and minor families problems are now being resolved at the police post especially families with material resources and not based on our custom and norms. In addition, well-to-do village elites use the police to intimidate their opponents and sometimes take local issues to the court in Bikoro or Mbandaka to show their level of influence especially when they are not satisfied with customary solutions. (Interview, customary chief of Kalamba, May 2012)

The police in the study area are not legally attributed with this power, but they use their authority in this manner since the people are not aware of the laws, have no recourse, and the presence of the police intimidates the locals. The police forcefully arrest people in the study area in order to intimidate them.

In addition, although these village-level state administrative agents are not formally chosen by the BDD as partners in development interventions, they still hold discretionary power to mediate in issues related to local development. Their consent is also necessary to give the OPDs the legal status to function. Thus, recognition of these village-level administrative agents by the central government gives them the ability to constrain the power of the customary chief. The different power bases of the village-level state agents and the customary chiefs are a form of legal pluralism (Meinzen-Dick and Rajendra, 2002). This in turn allows local people to choose which authority structure to patronize to settle their disputes, a phenomenon known as forum shopping (Meinzen-Dick and Rajendra, 2002).

Power and resources of customary authorities

The 2002 Forest Code gives customary chiefs power to negotiate the social agreement with logging companies. This power transfer from central government also significantly increases the customary chief's power with respect to regulating access to land use and forest at the village level, which was previously based on customary laws.

The head chief or *chef de groupement* is also recognized by the state as the supervisory authority over other village chiefs. This power is limited to controlling the activities of customary chiefs under his ethnic group as he cannot influence the decision of local state administrators as highlighted by a chef de groupement in an interview:

> I don't have the power over the district officer of Secteur Elanga. My power is limited to coordinating the customary chiefs under my groupement and intervening in issues related to land allocation in the villages under my jurisdiction. I am often invited in meetings organised by local state authorities but these meetings are just informative to expose us with directive and guidelines of issues that have been decided. (Interviewed chef de groupement, Bofidji West, December 2012)

Property rights to land and forest in the villages is largely based on ethnic identity and customary law which conflicts with state laws (Akwah and Yoko, 2006; Musafiri, 2009; Yamba, 2009). Pygmies and migrants with no customary rights do not have direct access to land and forest resources. So they have to pay tributes to the customary chief and head of family groups to use the land.

Today, the powers of the customary chiefs in these villages have been reduced by the presence of the administrative chief and a police post. This reduction of the authority of the customary chiefs is also seen elsewhere across Africa where customary chiefs are being subordinated to state authorities (Nuesiri, 2013). Hence, the enforcement of customary practices of access to land and forest, not supported by local state authorities, is limited. This limitation on customary authority motivates wealthy village elites to build strong relations with local state authorities to gain control and maintain their access to land through the enforcement of their private claims over those of customary authority. Such a relationship was evident in Buya 1 as participants in the focus

groups indicated that the executive members of the OPD, especially the secretary and the President, have close relationship with the chef de Secteur and the village administrative chief. There are also rumors in the village about how these executive members and some wealthy villagers give frequent gifts (chickens, goats, and plantains) to these local state authorities and are favored by these authorities when there are problems.

Power and resources of the OPD

The executive committee of the OPD is recognized by their benefactor, the BDD, as the decision-making body of the OPD. The executive committee receives training and information from BDD, money to organize village meetings to engage the villagers in their projects, and farm implements to be distributed to the villagers. Given the financial requirements for active membership in the OPD, the poor and less privileged in the villages (Pygmy and women) are often unable to run for executive office. Although there were some women and Pygmies in the executive committee in the OPDs studied, they have very little influence in decision-making. Information gathered from the focus groups also indicated that seats reserve for the women and Pygmies in the committee is often a demand from the intervening agency (BDD), but in practice their voices are not very important. The recognition received from the BDD by the executives of the OPD empowers and enables them to have influence with customary and state authorities. The training and resources they get and the position they hold give them new status in the village and the villagers treat them with respect. The executive members become senior village elites and often participate in meetings together with the local state authorities.

However, although the customary and local state authorities are often consulted in local development projects, they do not usually serve as counter-powers in decision-making relating to local development activities carried out by the OPDs, except in situations of conflicts. This was clearly indicated by the Chef de Secteur who noted

> I am always consulted whenever there is any development projects in these villages and often invited in meetings but I don't intervene in local decision-making process in village associations regarding the projects. I only intervene if conflict arises and complains are brought to my notice. My responsibility is to maintain peace and order and the rule of the law. (Interview, Chef de Secteur E'langa, May 2012)

Nevertheless, the local state authorities are often consulted by BDD, participate in meetings, and intervene in situation of conflicts in distribution of benefits.

Rural citizenship in Bikoro

> Direct access to land and forests based on cultural identity, is the main factor that determine who benefits from the social agreement on logging compensation. (Customary chief of Beambo-Kalamba)

In Bikoro, only the traditional authorities including customary chiefs, heads of sub-groups, and families with traditional landholding rights benefit from the social agreement with logging companies. The Pygmies, who are the indigenous people, together with migrants without land rights in these villages are excluded from the logging compensation. Pygmies are poorly educated and so lack the ability to effectively articulate their needs and priorities. They are also constrained by their lack of material assets, social acceptance, and self-esteem (Musafiri, 2009). Their nomadic lifestyle and high dependency on the forests further inhibit them from pressing for inclusion and access to material resources. The Pygmies are typical hunters and gatherers and not agriculturalist. They move from location to location in the forest to collect non-timber forest products, hunt, and fish. They are constraint by a sedentary lifestyle to maintain access to land for agriculture. They generally supply labor to the Mongos, the non-Pygmies, in exchange for food crops and to maintain their access to forest land. Indeed, the Pygmies' weak power resource (lifestyle, limited access to land, and poor education) leads to their weak material resource base and consequently their inability to strongly influence those who govern in Bikoro.

Information gathered from the focus-groups discussion revealed that women also do not control access to land and forest but maintain their access via their husbands. This is a customary law provision that state authorities have not overturned in Bikoro. Single women and widows without children negotiate their access to land and forest with the head of family and customary chief. The mechanism of control and maintaining access to land and forest is gender biased. Married women are able to gain and maintain their access to land and hence benefited from logging compensation through their husbands. Single women and widows without any relation to a male folks (uncles or sons) are culturally prohibited from controlling and maintaining their access to land; hence, they benefit less than married women from the terms negotiated in the logging compensation agreement. This contributes to keeping the single and widowed women poor in Bikoro and consequently reduces their ability to influence governance in Bikoro.

In the study area, only a minority of the villagers are included in BDD initiatives by the OPD – therefore, only a minority benefit from these activities. Only 15 households were selected by BDD through the OPD in a food security project in Buya 1 and Ikallanganya in 2010–2011. Buya 1 has a population of about 3000 people and about 260 households, while Ikallanganya has a population of about 2000 inhabitants and about 143 households. Information from the focus groups revealed that all these households selected by BDD were made up of members of the OPD executive committees and their families. In an interview with an official of BDD, he explained:

> We cannot work with all the population, and it also depends on our funding and the type of intervention. For our food security project, we work with only limited numbers of villagers in the OPD because of limited funding. We often support villagers with large farms who produce more for the market. (Interview, an official of BDD May 2012)

The BDD choice to work with limited number of villagers, especially the most pro-
ductive villagers, is buying for success – participation as a means (Baviskar, 2005;
Mohanty, 2003) and not necessary limited funding. To address equity explicitly, the
poor and marginalized groups should be given the privilege to strengthen the material
based in their food security project.

An executive committee member claimed in an interview that the OPD serves the
interest of the entire village and the villagers are engaged in their activities:

> We respect and work according to the rules of our constitution. We report all our activities
> to the villagers in our monthly meetings and engage them in these meetings in identifying
> problems and solutions. The members of the organization have the rights to discipline or
> sanction us if we use our authority in ways that do not conform to the organization rules
> and regulations by voting us out or making us pay a fine. (Interview, OPD executive
> member in Buya, 1 May 2012)

Contrary to the views of the OPD executive interviewed above, information gathered
from the focus-groups discussion revealed that the OPDs serve the interests of the
executive committee and the active members.

Villagers told us that while they participate in village meetings organized by OPD,
their voices are not taken into account. I also observed that villagers also lack the ability
to articulate needs and hold the OPD accountable as a result of limited information flow
and lack of material resources. There has never been any OPD executive voted out of
office in the villages or sanctioned through fines. The administrative officer of Bikoro
Territory disclosed that:

> The local population is represented in BDD interventions in most cases by a club of
> friends who have high interest in the interventions. Most of the activities are organised
> by them or according to their directive. Only few villagers benefit from these interven-
> tions. Majority of the population live in poverty, hardship and poor social conditions.
> (Interview, administrator of Bikoro, May 2012)

Nevertheless, villagers in Beambo-Kalamba were able to put pressure on the OPD to
change the distribution of farm implements and food donated by the World Food
Programme and Food and Agriculture Organization's People for Progress project.
They did so by taking their complaints before the state administrator of Bikoro
Secteur. The women also exerted pressure by spreading rumors of misappropriation
of gifts donated to the villages and these rumors, according to women I interviewed,
have reduced the level of trust and respect bestowed on some of the OPD executives
and their ability to mobilize the villagers for development activities. This is,
however, a rare example of villagers expressing an ability to influence those who
govern.

Membership in the OPD, from information gathered in the focus-groups discussion,
is open to all living in these villages with membership fees[6] (interest-based inclusion).
But, the Pygmies, the poor villagers, and women (single and widows) are often

excluded from projects funded by the OPDs because they cannot afford the contribution fees. In addition, the norms prohibit women to participate in decision-making processes in front of the men. Thus, financial resources and customary norms constrain the ability of pygmies and women to influence the OPDs. Women who are courageous participate in the OPD actively, but most often they channel their views via the women association. An OPD executive committee member explained,

> In the OPD, the Pygmies have the same attention as the Mongos. But the fact is that the pygmies don't like to join associations. They often refused to pay the association fees when they are members, and therefore cannot access the same rights as others. The association does not support any villagers that are not a member. (Interview, executive member of the OPD in Beambo-Kalamba, May 2012)

From field observation, the Pygmies in these villages are not agriculturalists. They depend on forest products (hunting, fishing, and gathering) for their subsistence. They do not control access to forest land but maintain their access via uncompensated labor. However, most of the projects executed by the OPDs are oriented toward agricultural service delivery, which is to the benefit of the Mongos who are primarily agriculturalists.

Discussion

In this section, I analyze and discuss the underlying factors determining rural citizenship in Bikoro. I discuss the forms of inclusion that have emerged in Bikoro and their overall consequence for pilot REDD+ intervention. Based on the findings, I also present my contribution to the literature on the effects of recognition on citizenship.

Power relations and access to land and forests

The land and forest laws in the DRC from the colonial era to date favor wealthy elites, private entrepreneurs, and customary authority. In the rural areas where customary authorities determine access to land and forests, persons without traditional rights to land, like Pygmies, women, and migrants, do not have the means to build up their material resource base and consequently, they have weak power resources to influence

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[6]The first criterion to become a member is that you are residing in the village. Even though this was not clearly stated in the organization rules, the information from focus groups confirmed that a member of the OPD resides in the village. Equally, there was no member of the OPD from different village. The second criteria, which is more important, is the fees. The ability to afford the fees and the intention to pay are considered here. There are individuals in the village who can afford the fees but are not willing to become members for some other reasons. As for the Pygmies, poor, single women, and widows the issue was not being able to afford the fees. They clearly mentioned this as a primary factor in the focus groups.

those who govern. Subordination of marginal groups is reinforced by forestry laws that deprive them of material resources, thus undermining their ability to influence those in power. As such forestry laws and their effects on resource access are the principal determining factors of rural citizenship in Bikoro.

While higher scale intervening institutions such as the BDD, which are not tied to customary institutions, do transfer power resources to rural people, they do this through community-based organizations such as the OPD. Unfortunately, the majority of the villagers in the study area are historically poor due to land relations. Poverty of the villagers means many cannot pay the OPD membership fees of US$1. Consequently, their weak financial resource base constrains their ability to engage with the OPD and BDD. This situation weakens the accountability relations between the villagers and the OPD. The power of the OPD's executive members is directly linked to the recognition received from the BDD. This power is, however, amplified by the relative weakness of the villagers to demand accountability from these executives. Thus, majority of the villagers do not have the ability to influence those who govern the OPD.

Similarly, inequality in access to benefits from logging compensation payments between wealthy Mongo men (the main beneficiaries), Pygmies, women, and migrants continues to reinforce the privilege position of wealthy Mongo men. This is because government laws recognize customary authority as the mediator of the logging compensation payments and customary authority is more responsive to these relatively better-off Mongo men. Thus, recognition of customary authority, by the state, grants access and power resources to one group, while excluding others on the basis of identity. This implies that identity coupled with wealth status is a determinant of substantive citizenship in Bikoro.

The competing power relations between the customary chief and the administrative chief, and between the customary chief and the police authority in the village, speak to the plurality of state-recognized power centers at the local level. This legal pluralism at the local level can be traced back to the colonial era in tropical Africa (see Colchester, 1994; Mamdani, 1996; Oyono et al., 2006). This creates social tensions and diminishes the opportunities for deliberative and participatory decision-making among governance actors at the local level (Ojha and Pokharel, 2005; Spingate-Baginski and Blaike, 2007). In this competitive environment, there are no effective checks on the powers of the elites against those of the poor and marginalized. The elites have the luxury of consulting the authority structure that would deliver a favorable judgment to their complaints, the forum shopping phenomenon. This competitive environment strengthens the elite's ability to influence those who govern.

Inadequate social infrastructures in the study area constrain villagers' mobility and access to resources. These inadequate social infrastructures are based on the protracted conflict in the DRC, the centralized policy of the Mobutu era based on the fear that decentralized resources give local elites the ability to contest power (Vlassenroot, 2006), and the difficulty of constructing and maintaining roads in Bikoro (Yamba, 2009). Thus, government policy, broader political forces, and geography have an

impact on rural people's access to power and resources, and consequently on their ability to influence those who govern.

Table 2 is a summary of the research findings about power resources and access to land and forests. In Table 2, the power resources variables are taken from Benjaminsen and Svarstad (2010), while the access mechanisms variables are derived from Ribot and Peluso (2003). Table 2 shows that the weakest actors in terms of power resource base and access opportunities to land and forest resources are poor *ayant droits*, poor migrants, women, and pygmies. These groups of actors who form the larger number of people in the villages thus lack the ability to influence those who govern in Bikoro. Substantive citizenship is limited to person in authority, preferably male, and to the comparatively wealthy.

Accountability mechanisms

Accountability mechanisms in the local institutions in the study area also have an effect on rural citizenship. While the accountability of the customary chief is based mainly on local norms and customs (see Mamdani, 1996), state authorities in Africa today can demand accountability from customary authorities (van Dijk and van Rouveroy van Nieuwaal, 1999; Lund, 2006; Nuesiri, 2013). This is why in the study area, the presence of the administrative chief and the police deters the customary chief from making decisions that go against state laws, especially when wealthy village elites are pressing for land rights not favored by the customary chief. In this case, the accountability mechanism is manipulated by wealthy elites for their self-interest. Accountability is being manipulated by the powerful to influence those who govern.

The rules and regulations of the OPDs mandate that the executives should be accountable to the villagers they represent. However, the powers and resources available to village members of the OPD to demand accountability are weak; this alters the 'principal–agent relation' in the accountability mechanism stipulated in the constitution in favor of the OPD executives (see Agrawal and Ribot, 2012; Boven, 2006). In this instance, elections of the OPD executives act as a mechanism to renew their mandate and not an effective form of routine accountability. The weak counter-power or accountability relation in the OPD is due in part to the limited information and knowledge of the OPD village members to actually understand OPD rules, and also to their weak capacity to act to protect their interest (see Manin et al., 1999). On the other hand, the OPD executive committee exercises upward accountability to the NGOs and agencies that support them like the BDD.

In Beambo-Kalamba village, the villagers demanded accountability from the OPD by inviting the local administrator. However, this mechanism does not function effectively since OPD executives often form allies with local administrators. When the women spread rumors over misappropriation of funds, this did not result in sanctions such as dismissal of OPD executives. Public demonstration and protest were never mentioned in interviews, but women in Beambo-Kalamba indicated that they often

Power resources	Administrative chief	Customary chief	OPD executives	Ayant droits		Migrants		Women	Pygmies
				Rich	Poor	Rich	Poor		
Economic power	2	4	5	5		5	1	2	1
Property/user rights land and forests	4	5	3	5	5	4	2	1	1
Political power	5	1	3	3	1	4	2	1	1
Influence on governmental institutions	5	2	4	4	1	4	1	1	1
Discursive power	2	2	4	3	2	4	2	2	1
Power through knowledge	3	3	4	3	2	3	2	2	1
Power through violence	1	2	1	2	4	1	1	1	2
Weapon of the weak	1	2	1	1	4	1	3	5	4
Power through identity	3	5	3	5	5	1	1	3	2
Access mechanisms									
Legal access	✓	✓	✓	✓	✓				
Illegal access			✓	✓		✓	✓	✓	✓
Technology									
Capital		✓	✓	✓		✓			
Market			✓	✓		✓			
Labor	✓	✓						✓	✓
Knowledge	✓	✓	✓	✓		✓			
Authority	✓	✓	✓						
Identity	✓	✓		✓	✓			✓	
Social relation	✓		✓	✓		✓			

Table 2:   Power resources and access mechanisms available to local actors in the study area.

Note: The code of the power resources of the different actors: 1 = very low, 2 = low, 3 = fair, 4 = high, 5 = very high.

spread rumors to stigmatize OPD executives, especially when there are issues related to the misappropriation of funds. The villagers participated in OPD meetings, but rarely engaged in deliberations.

Elite capture

Elite capture has also had some impact on rural citizenship in Bikoro. The OPDs are not created out of local initiative grown from within these societies they claim to represent. They are initiated by external agents and actors to achieve legal recognition for non-state representation of local people. These OPDs have ended up as organizations that are neither fully acceptable to local people nor effective in delivering services to the people. This process of cultivating non-state actors in local communities in Africa to represent the interest of local people, and the subsequent poor performance of such local institutions has been observed by other scholars (Kanyesigye and Muramira, 2003; Oyono, 2004; Ribot, 2000).

When these OPDs are created, there is a tendency for the local elite, partly due to their strong power resource base, to capture the role of political leadership. The strength of elite capture is also associated with the villagers' weak power resource base. When the OPD executives are empowered by the BDD, they often do not maintain dynamic communicative interaction with their fellow villagers. These elites know the villagers cannot effectively sanction them, so they have no fear appropriating OPD resources for themselves. Similar cases have been documented in decentralized forest governance in other Central African countries, notably Cameroon (Bayart, 1993; Bigombe, 2003; Oyono, 2004).

Substantive citizenship and local democracy

What do the findings of this article tell us about power resources, substantive citizenship, and local democracy? First, we see that substantive citizenship, defined as the ability to influence those who govern, is limited to a very small number of village elites. These are individuals mainly of a specific ethnic identity (Mongo) recognized and empowered by state laws since the colonial era, specific gender (male), with unrestricted access to land and forest resources, with educational capacity that enables them to articulate their demands, and with the social skills that enable them to capture benefits from recognized community-based organizations, and skills to maintain close ties local state administrators.

Substantive citizenship in the study area is therefore related to recognition by the state, recognition by higher level non-state actors like BDD, local culture, material resources accumulation, education, and social skills. While this study has not examined in detail the relationship between substantive citizenship and democracy, Rosanvalon (2008) shows that only individuals and groups with a very strong power resource base (educated, living above poverty, able to access information, and strong social

skills) can demand representation and accountability from those who govern – even where there are electoral forms of representation. Substantive citizenship, the ability to influence those who govern, is a prerequisite for democratic governance. Indeed, even in the absence of electoral forms of democracy – that is, formal democracy – substantive democracy, the accountability of leaders to the people, can be established through substantive citizenship. What is shown in this case is that in rural DRC in the villages studied, there is neither formal nor substantive democracy and that substantive citizenship in this mix of customary and non-governmental institutions is reserved for the elite few.

If democracy is to take root in the DRC, the power resources of the majority of its people would need to be strengthened. Forestry and development agencies in places like Bikoro can help make this happen by designing projects that bring about a restructuring of tenure and access rules governing land and forest resources. The broad-based citizenship that makes for the possibility of democracy is related to the material relations within society.

Conclusion

This article has shown that substantive rural citizenship in Bikoro is shaped by power resources which are interrelated with mechanisms of access. The small and relatively wealthy Mongo male population group in Bikoro territory engages substantively with external interventions and benefits from these interventions. Meanwhile, the Pygmies, women, and the majority poor villagers lack the power resources to engage substantively or to benefit from these interventions. The Pygmies – who are about 20 percent of the populations – are generally excluded from decision-making processes and the benefits from these interventions. Women, migrants, and poor people also suffer exclusion.

Recent land and forestry laws in the DRC have not been able to address this inequality as they continue to recognize customary authorities as decision-makers over land and forest resources in rural areas. Ministerial text, in contradiction to the 2002 Forest Code, places chiefs as the heads of elected local committees that oversee the distribution of benefits from logging concessions. Meanwhile, other local elites with the right political connections and those with traditional landholding rights (*ayant droit*) have been able to accumulate material resources and build up their power resource base. They are therefore able to influence those who govern.

Forestry and development interventions recognized and empowered community-based institutions in the hope of empowering rural people. While the community-based institutions claim to promote equity in the redistribution of benefits, in practice they have been captured by local elites and serve to reinforce inequality in power relations. This capture undermines equity concerns in these forestry and development interventions and narrows local citizenship.

Differential access to land and material resources is thus the main factor that constrained villagers' ability to influence the authorities chosen in forestry and development interventions in Bikoro. This is directly related to the high degree of social differentiation between the Mongos, Pygmies, and immigrants – inequalities of power, status, and wealth (Akwah and Yoko, 2006; Huggins, 2010). Women also have less access to land and material resources in the area due to culturally sanctioned gender bias. This inequality has influenced the ways the villagers engage in institutional spaces (for similar examples elsewhere, see Cornwall, 2002; Gaventa, 2002; Larson, 2008). Those with more wealth control institutions and those with less are excluded through various mechanisms.

The findings, therefore, demonstrate that empowering these local-level institutions for future REDD+ intervention in Bikoro without readdressing existing inequalities in access to resources and interests will add an additional 'injury of deprivation' to the 'insult of misrecognition' (Fraser, 2008, p. 69) already being suffered by the vulnerable segment of the local population. While identity and interest-based institutions may be unavoidable in forestry and development interventions at the local level, to strengthen local citizenship and consolidate local democracy in the absence of democratic local institutions, REDD+ project proponents in Bikoro Territory need to understand local power relations and the processes that created them. REDD+ project proponents need to also build the capacity of residence-based institutions accessible to all rural people. In addition, REDD+ project proponents must avoid weakening the power resource base of the marginalized population groups. They should instead strengthen the power resources of the marginalized so they too can have the ability to influence those who govern them.

Acknowledgements

Notes on contributor

Raymond Achu Samndong is a PhD fellow at the Department of International Environment and Development Studies of the Norwegian University of Life Sciences. He is conducting his PhD research on environmental governance and climate change, focusing on the legitimacy of local REDD+ governance structure(s) in REDD+ pilot project development in the DRC. Email: raymond.samndong@nmbu.no; rayasboy@yahoo.com.

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PAPER 2

Institutional analysis of causes of deforestation in REDD+ pilot sites in the Equateur province: Implication for REDD+ in the Democratic Republic of Congo.

Raymond Achu Samndong*[1)], Glenn. Bush[2)], Arild Vatn[1)] Melissa Chapman[2)]

1) Department of International Environment and Development Studies, Norwegian University of Life Sciences
2) Woods Hole Research Center, Falmouth, MA, , USA

*Correspondence: raymond.samndong@nmbu.no/rayasboy@yahoo.com

Abstract:
As DRC moves from REDD+ readiness to implementation, analysis of the causes of deforestation at the local level is paramount. The present study contributes to this by assessing both proximate and underlying causes of deforestation in two REDD+ pilots of the Équateur province. The study found that agricultural expansion through shifting cultivation is the main proximate cause of deforestation. This activity is accelerated by logging that simplifies clearing of land. Logging also contributes to the total biomass loss from the forest. Shifting cultivation is driven by the poverty conditions of the study area. Poverty is also linked to the political and institutional structures of forest governance. These structures are controlled by political elites who influence local decisions to clear forests. While actions to curb deforestation might be challenging, this study suggests that addressing the underlying causes through effective land use planning and developing robust accountable institutions while providing alternative economic opportunities to the local population are necessary.

Keywords: *land use change, deforestation, poverty, institutions, REDD+ strategy, Équateur province*

1. Introduction

The Democratic Republic of Congo (DRC) is a focal country in the climate policy area called REDD+ (reduced emissions from deforestation and forest degradation). With approximately 152 million ha of dense tropical forest, comprising the second largest sovereign territorial rainforest in the world after Brazil. The DRC accounts for most of the remaining rainforest in the Congo Basin and although rates of deforestation in the DRC are low by comparison to countries in the Amazon basin and Southeast Asia, almost half a million hectares are lost annually (FCPF 2016). Economic growth and poverty alleviation are top national priorities and the country's forests are under increasing threat from small holder agricultural expansion, with the prospect of large scale commercial and industrial agriculture on the horizon (IMF 2013). As one of the least developed countries in the world, DRC is a high forest cover and low deforestation (HFLD) country. One of

the key strategies articulated in the Paris Agreement's strategies to limit temperature increase is continuing to keep deforestation rates low in HFLD countries (UNFCCC 2015).

Central to a successful REDD+ program is a basic comprehension of drivers of deforestation in order to identify how to best enhance forest carbon stocks. Some studies have argued that agricultural expansion due to population growth is the main driver of deforestation in the DRC (Defourny 2011; Tollens 2010), issues that are strongly reflected in the DRC REDD+ strategy. However, the conclusions of such studies are weak because of a poor contextual understanding of deforestation dynamics, due to the absence of reliable historical data and detailed knowledge on the diversity of forests in terms of their ecological, economic and social values (Greenpeace-International 2010; Ickowitz et al. 2015; Mpoyi et al. 2013).

In this paper, we assess the dynamics of deforestation in two REDD+ pilot project sites in Équateur Province of the DRC, by considering both proximate and underlying causes. We ask the following three questions: 1) What activities cause deforestation in the pilot project area?; 2) What are the most important dynamics influencing this process?; and 3) What are the implications of our findings for the DRC REDD+ strategy? The findings make a key contribution to the current debate about drivers of deforestation and REDD+ policies aimed at reducing deforestation at the regional and national level of the DRC.

The paper consists of 5 sections. Following the introduction, section 2 presents the analytical framework employed. Section 3 provides the geographical context and the research methods used. Section 4 presents the results of our analyses regarding proximate and underlying causes of deforestation in the Equateur province. Finally, in section 5, we discuss the findings in relation to the DRC REDD+ strategy and conclude with key suggestions for policy action.

2. Analytical framework

Tropical deforestation is the direct result of land cover and land use changes. Explaining deforestation demands first, assessing what changes are occurring to the forests (biophysical) and second, what human processes (social and economic) are creating the changes in those specific locations. Focusing on the second set of issues, Geist and Lambin (2002) conceptualize the complex set of social and economic actions and factors that drive deforestation into two categories: (1) proximate causes such as agricultural expansion, wood extraction, expansion of infrastructure and (2) the underlying driving forces such as demographic, economic, technological, policy/institutional, cultural and socio-political factors. The proximate causes can usually be clearly identified for analysis; however, assessing the local direct impact of the underlying driving forces is a more challenging proposition. The effect of underlying forces are linked to socio-economic and political process structured by relations of power (Adger et al. 2001; Bromley 1999; Fairhead & Leach 1998; Hersperger et al. 2010).

In this paper, we use an adapted version of the environmental governance framework by Vatn (2011) to assess the proximate causes and underlying driving forces of deforestation in the REDD+ pilot project areas (Figure 1). This framework draws on the Institutional Analysis and Development IAD framework (see Ostrom et al., 1994).

The framework emphasizes the role of actors and their actions. They are defined as social entities, in our case involved in the use and management of forests. They are grouped in two categories—political and economic (some actors 'move between' the two categories). Economic actors are those who use resources e.g., private agents such as farmers and loggers, but also the state as the *de jure* forest owner receiving revenue from concessions. Political actors define and enforce rules of use and control of forest resources and can include politicians, government agencies involved in forest management as well as traditional or customary authorities
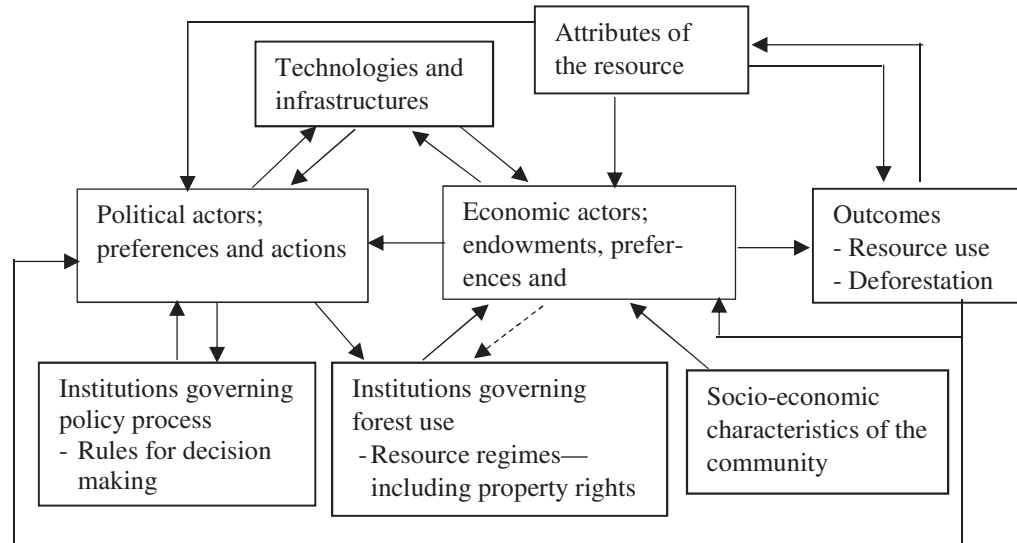
The bold arrows indicate strong interaction while the dashed arrow indicate weak interaction

Figure 1. Environmental governance framework for analyzing resource-use problems
Source: Adapted from Vatn (2011)

The motivations that drive actions – in our case use of forests – are strongly influenced by attributes of the resource, technology, infrastructure, socio-economic characteristics of the communities and institutional arrangements. For example, the hydrological conditions of the forests influence availability of resources. The construction of roads for commercial timber exploitation opens up the forest to other land use activities (shifting cultivation, charcoal production, and hunting). Socio-economic characteristics of the communities such as ethnicity, proximity to the resource base, market access and social networks, influence individuals' and households' (economic actors) decisions to convert the forest to other land use activities. Determining why an actor chooses a specific option thus requires an analysis of the socio-cultural context, to reveal important relationships and moral codes that interplay with economic motives (Cleuren 2001).

The institutional arrangements influence the motivations and actions of both political and economic actors. These structures include procedures governing rulemaking, e.g., constitutions, customary law or collective action, as well as rules governing access and use of forests (resource regimes). Of key importance are institutions affecting the interactions between actors (Vatn 2011). Actors may interact through voluntary exchange (involving the state and logging companies or

traditional authorities and local loggers) or by command (state and communities), the granting of formal property rights, or by following local norms/customary rules.

From the institutional arrangements perspective, deforestation outcomes largely depend on three key factors: 1) the political and institutional structures; 2) the characteristics of the resource and; 3) the interests and values of the actors themselves. The resource regime may fit well the aims defined and the dynamics of the forest resource, but may have limited effect if actors are motivated to manipulate the rules (rule breaking, corruptions, illegality, and patronage). Such actions may require changing institutional structures.

3. Study area and methods

3.1. The study area

This study was conducted in two territories of Équateur province—Bikoro and Gemena territories—where the Woods Hole Research Centre (WHRC) has initiated a REDD+ capacity building program and community level pilots in partnership with the Ministry of Environment and Sustainable Development (MECNT), supported by the Congo Basin Forest Fund (CBFF). The Equateur province has a total area of 403,292 km^2 (equivalent to the land area of France) and contains 28% of the total forest area in the DRC (UNDP 2009) (Map 1). In 2008, the population of the province was estimated at 3,574,385 inhabitants distributed into two main ethnic groups, the Bantu and the Batwa (also known informally as Pygmies). The Batwa form only about 20 per cent of the total population and are located in the southern part of the province. The Bantu consists of different sub-ethnic groups, such as the Bangala; the Ngwaka in the north of the province; and the Mongo, Ntumba and Ekonda in the south. The province was divided into five new provinces in July 2015, following the national decentralization reform, but our analysis is based on the political and governance structure of the province before the division.
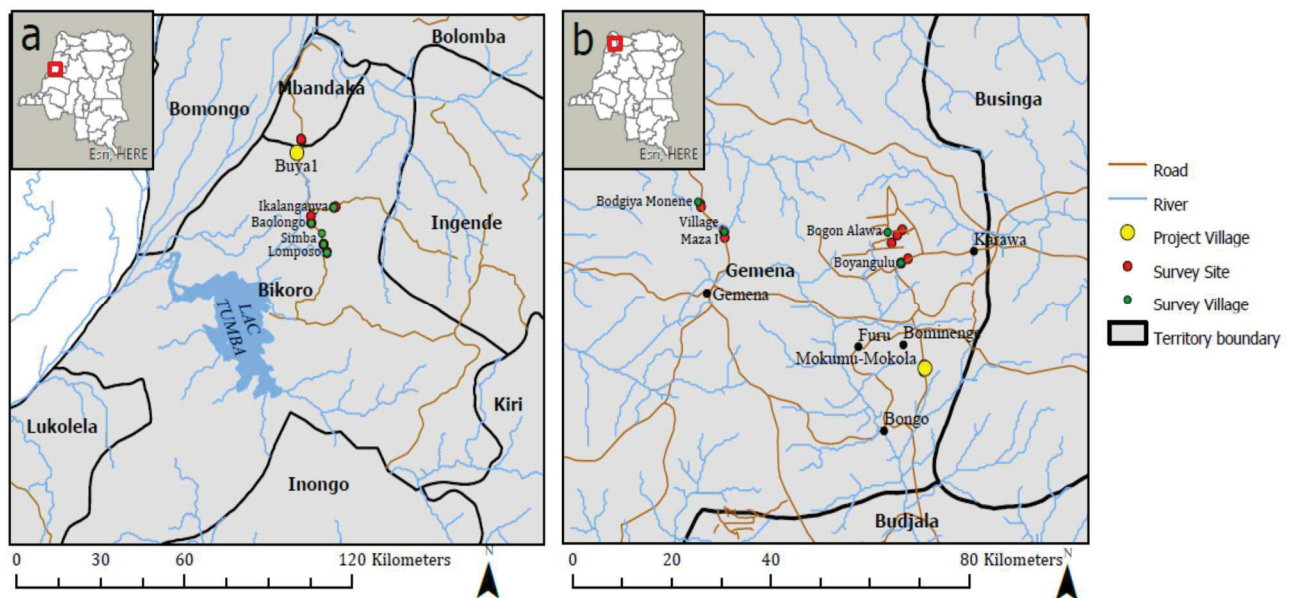
Map1. Map of the two pilots in Équateur province: a) Bikoro territory, b) Gemena territory.
Source: Chapman (2016)

The study site in the Bikoro territory is located in the southwest of the province accommodating swamp equatorial rainforest, inundated year round, making road construction and maintenance difficult (Yamba 2009). The territory has a population of about 286,600 (WFP 2014). The site in the Gemena territory is located in the northwest of the province, which is now the Sud-Ubangi province and characterized by lowland dense humid rainforest that transition into evergreen savannah woodland and grasses. The population of the Gemena territory is estimated to be about 948,500 (WFP 2014). The population of both study areas rely heavily on the forest for their livelihoods by practicing slash and burn, shifting cultivation, extraction of non-timber forest products, fishing, hunting and charcoal production.

The land and forests in both areas is *de jure* owned and managed by the state as defined by the 1973 Land Ordinance and the 2002 Forest Code. Socially embedded customary institutions define the *de-facto* property rights and the local population is strongly attached to such institutions. Land is considered as a common heritage, both as physical and cultural inheritance from ancestors.

3.2. Methods

To understand the proximate causes of deforestation, we assess the characteristics of economic actors (households), actions and endowment and the socio-economic characteristics of the communities and contextual factors that influence economic actors' decisions to clear forest including what enables them to do so. To understand the underlying causes of deforestation in the pilot project area, we assess: 1) the socio-economic process of the communities and beyond; 2) the political and institutional structures of forest governance (rules of decision-making and property rights); and 3) the political actors' preferences and actions that shape the motivation of economic actors to clear forest.

ArcGIS pro was used to assess the change in above ground biomass (as a post to forest area cover) for both the Bikoro and Gemena territories. Using global forest loss data (Hansen et al. 2013), at 30-meter resolution as a mask of the biomass density in year 2000, the amount of biomass lost per year for the period 2001-2014 was calculated. This analysis was done using the Google Earth Engine (Gorelick et al. 2017), and compiled by administrative regions provided by the World Resource Institute (Hansen et al. 2013). River and lake layers were provided by the WWF HydroSHED global hydrographic data set. All maps are projected in Africa Albers Equal Area Conic coordinate system. We calculated the amount of biomass loss that can be attributed to different land use activities in these territories by using concession boundary data (logging concessions and commercial agriculture concession). Using 30 meter forest loss data and 30-meter biomass density data, the amount of biomass in concessions from 2001-2014 was calculated at the provincial and territory level. The remainder of biomass loss can be attributed to numerous activities, including slash and burn agriculture.

3.2.1. *Socioeconomic data collection*

Fieldwork was conducted between May and August, 2013 and between July and August 2014. Five villages in each of the two REDD+ pilot sites were selected based on their location and with significant amounts of biomass change identified in the study sites. In Bikoro (Map1a), the villages included Buya 1, Ikalanganya, Baolongo of the Bofidji west tribal chiefdom located in Secteur Elanga and Nsimba and Lomposo of the Ntomba tribal chiefdom located in Secteur Lac Ntumba. In Gemena (Map1b), the villages included Bogon-Alawa of the Bombakabo tribal chiefdom, Boyangulu of the Bokode tribal chiefdom, Bokumu-Mokola of the Bominenge tribal chiefdom all located in Secteur Banga-Kungu and Bodigia Monene, Maza 1 of the Bodigia tribal chiefdom located in Secteur Nguya. The socio-economic data were collected by the lead author together with four trained local field research assistants. The instruments were pretested for consistency and accuracy.

In total, 360 households were surveyed using a household questionnaire. It was structured to collect data on socio-economic characteristics of households[1], land use activities, use of forest resources, local institutions regarding forest management that are relevant for explaining land use change in the villages. We used a stratified, random sample technique, in which a list of all village households was compiled by WHRC and village authority (Table 1) and then stratified to by socio-economic groups, e.g., the Batwa Pygmies'. Respondent households were then selected at random from each strata in proportion to their representation in that village.

Table 1. The sample size of the household survey in the study area

Surveyed villages	Sampled households in the village	Total households in the villages
Bikoro pilot villages		
Buya 1	45	370
Ikalanganya	45	182
Baolongo	30	367
Nsimba	30	226
Lomposo	30	280
Gemena pilot villages		
Bokumu-Mokola	45	360
Bogon-Alawa	45	178
Boyangulu	30	328
Bodigia-Monene	30	262
Maza 1	30	204
Total	360	2757

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[1] Household was defined in the questionnaire as a group of people (normally family members) living under the same roof, and pooling resources (labor and income).

Semi-structured interviews were conducted with 67 local actors (key informants) selected from six categories—village authority; local opinion leaders/executive members of local village associations (groups of famers, etc.); staff of intervening agencies; officials of the Ministries of Environment and Agriculture; regional parliamentarians and local logging operators. The purpose was to collect contextual information on demographics, prices on agricultural products, land use and property rights/tenure arrangements, forest policy and law enforcement, conflicts, capacity issues, relations of power and changes in socio-economic conditions that are related to land use change and information about practices in forest management and utilization not covered in the household surveys.

In addition, 45 focus group discussions were conducted in the 10 villages surveyed: five rounds of focus group discussions with men, women, customary landowners, migrants and Pygmies (12 participants) per village in the Bikoro pilot site and four rounds focus group discussions with men, women, customary landowners and the migrants (12 participants) per village in the Gemena pilot site. The women and Batwa Pygmies were grouped separately because they are often a marginalized group. Further contextual information was collected regarding how local people see and express their general livelihood situation and how they evaluate local governance and power structures. In addition, we collected valuable information on their general attitudes, values and norms in relation to forest resource management and use.

Field observations such as availability and quality of roads, schools, healthcare, means of transportation, community projects, traditional use of resources, and illegal activities were also collected. This information was used to identify and control for potential bias in the survey data, triangulate on responses in the household survey responses and add depth to our understanding of people, society and the landscape. GPS waypoints were collected in each village to map out the land use types and the status of the forest through group transect walk. We walked into the forest and visited farmlands (slash and burn agriculture), crops, fishing streams, hunting sites, non-timber forest products (NTFPs), charcoal production sites and abandoned logs in already-logged portions of the forest. Secondary and primary forests and their limits were also noted.

3.3. Data analysis

Not all households clear forestland every year. We analyzed variables hypothesized to influence household's decisions firstly to clear forestland and secondly, for those that had cleared, the likely influence of how much was cleared. As such we conducted a twostep analysis. In step 1, we used a random effect logit regression to identify household factors to clear or not to clear forest. In step 2, we performed an ordinary least square regression (OLS) to examine the factors affecting the area of forest cleared among those clearing. The explanatory variables used in our analysis were grouped into four categories; 1) household characteristics; 2) household endowments; 3) social capital and; 4) contextual factors/institutional variables (see Table 2). With household characteristics we refer to standard variables including gender, age, education level of household head, the number of adult males and females in the households (Babigumira et al., 2014; (Coomes et al. 2011). The latter factor regards the availability of household labor, an important variable in forest

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clearing process among shifting cultivators especially in the absence of a labor market (Caldas et al. 2007). In our study sites, female adult labor plays a big role in forest clearing since the majority of the farming activities are done by women (Samndong & Kjosavik *In review*).

The household endowment variables used in our analysis are the quality of housing including material for roofing, the value of household farm assets (farm tools), size of land holding (total parcel, rented parcels and abandoned land parcels to fallow) as well as total household income per year. To provide valid inter-household comparisons of income, the latter was normalized using the OECD scale (Hagenaars et al. 1994). We used household membership in community level groups or associations as an indicator for the household social capital (see Babigumira et al. 2014). The main community based organizations in the study area are farmer and religious groups.

Table 2. Descriptive statistics of the variables used in the regression models

Variables	Definitions	Units	Bikoro (N=180) Mean	Standard deviation	Gemena (N=180) Mean	Standard deviation	Total (N=360) Mean	Standard deviation
Dependent variables								
Decide to clear	Whether or not a household cleared forest in the past 5 years	0/1	0.778	0.417	0.856	0.352	0.817	0.387
Area cleared	How much forest was cleared on average per year	Ha	0.999	1.039	1.073	0.894	1.037	0.968
Independent variables								
Household characteristics and endowments								
Gender	Gender of household head (Man/woman)	0/1	0.878	0.328	0.939	0.240	0.908	0.289
Age	Age of household head	Years	43.667	13.157	43.494	15.003	43.581	14.091
Education	Household head with no formal education	0/1	2.472	0.743	2.228	0.739	0.152	0.360
Male in working age	Number of male aged 16 to 60	People	1.739	2.203	2.811	2.523	2.275	2.425
Female in working age	Number of female aged 16 to 60	People	1.711	1.826	2.661	2.240	2.186	2.096
Immigration	Household head is a migrant	0/1	0.578	0.495	0.594	0.492	0.586	0.493
Land	Household total area of land holding	Ha	2.197	1.868	2.780	2.487	2.488	2.215
Rented land	Household total area of land rented	Ha	0.235	0.636	0.126	0.658	0.180	0.648
Land not in use	Household total area of land abandoned to fallow	Ha	2.458	2.666	2.860	2.975	2.660	2.828
Assets—farm tools	Value of household farm tools	USD	17.427	23.448	20.679	17.263	19.053	20.625
HH Income	Normalization of HH income OECD scale	USD	626.201	550.047	275.494	355.641	143.439	200.657
Social capital								
- Farmers groups	Membership of local farmer groups	0/1	0.561	0.498	0.617	0.488	0.589	0.493
- Religious groups	Membership of church groups	0/1	0.783	0.413	0.689	0.464	0.736	0.441
Contextual factors and institutional variables								
Distance to forest	Household distance to the forest edge	Minutes	38	19.09	50.911	28.187	44.456	24.893
Shocks	Household experiencing shocks during the past 12 months	0/1	0.694	0.462	0.772	0.421	0.733	0.443
Market orientation	Crop production sold/total crop production	Ratio	0.623	0.242	0.424	0.244	0.524	0.262
Community distance to market	Community distance to the main market	km	70.833	17.164	48.833	18.693	59.792	21.057
Presence of logging 2008-2013	Presence of logging activity in community from 2008-2013	Scale	2.25	0.724	1.917	0.864	2.083	0.814
Presence of state rules	The presence of state rules in the pilot sites	Scale	3	0	1.5	0.501	2.250	0.830

These groups function as local mutual aid groups and are an important source of labor for forest clearing.

The contextual variables used in our analysis were household distance to forest, market orientation and household shocks experienced in the past 12 months. The market orientation variable was used to examine if household production is meant for market exchange (see Babigumira et al. 2014). The frequency and effect of shocks to the household was important to understand if households clear more forest as a coping strategy. Other contextual variables used in the analysis include community access to markets, the presence of logging activities in the pilot area in the period 2008-2013, e.g., the period before data collection. Including the logging related variable was important as it was expected that building logging roads would also facilitate further forest clearing for agriculture. The presence of state rules in the communities was used in the analysis to measure its effect on decisions to clear forest. Qualitative data from semi-structured interviews and focus group discussions were analyzed using content analysis and were developed into categories and themes to support the interpretation of the quantitative analysis.

4. Results

In this section, we present the results from the analysis by examining the proximate and underlying causes of deforestation in the study area. We start by assessing deforestation and biomass loss in the REDD+ project area, the proximate causes of deforestation at household level, the factors that influence households' decisions and actions to clear forest and the underlying causes of deforestation beyond the households.

4.1. Deforestation and biomass loss in the REDD+ pilot territories

Map 2 shows the loss of forest cover from 2001-2014 in each of the pilot territories. Deforestation is clustered around roads and navigable rivers. Many of these local roads were created by logging operations. There are five logging concessions in the Bikoro territory while no logging concession exists in the Gemena territory, but there are agricultural concessions (palm and coffee plantations). Artisanal logging is very common in both pilots. The logging concessions in Bikoro territory overlap with communities' land use area. Local people confirmed in focus group discussions that much of their agricultural and fallow land is located in the concession areas (field observations also confirmed this). While logging operations simplify entry, they also make clearing easier given the kind of manual technology available to the local people.

The estimated total percentage of above ground biomass lost from 2001 till 2014 in both REDD+ pilot territories as well as in the entire Équateur province are documented in Table 3. Gemena has lost 9.51% of its total biomass and Bikoro 3.95% measured as total biomass loss divided by the total biomass of the territory. Both territories have lost a slightly lower percentage of the forested area (defined as pixels with greater than a 30% tree canopy cover). In the Gemena territory, areas with high forest biomass are being deforested, but this is not the case in Bikoro territory due to the different nature of the forests. The total biomass loss in the Gemena territory is more than two times that of the Bikoro territory. This has a serious implication for REDD+, which is aimed to protect the carbon stock of the forest. In Bikoro, a large portion of the forest
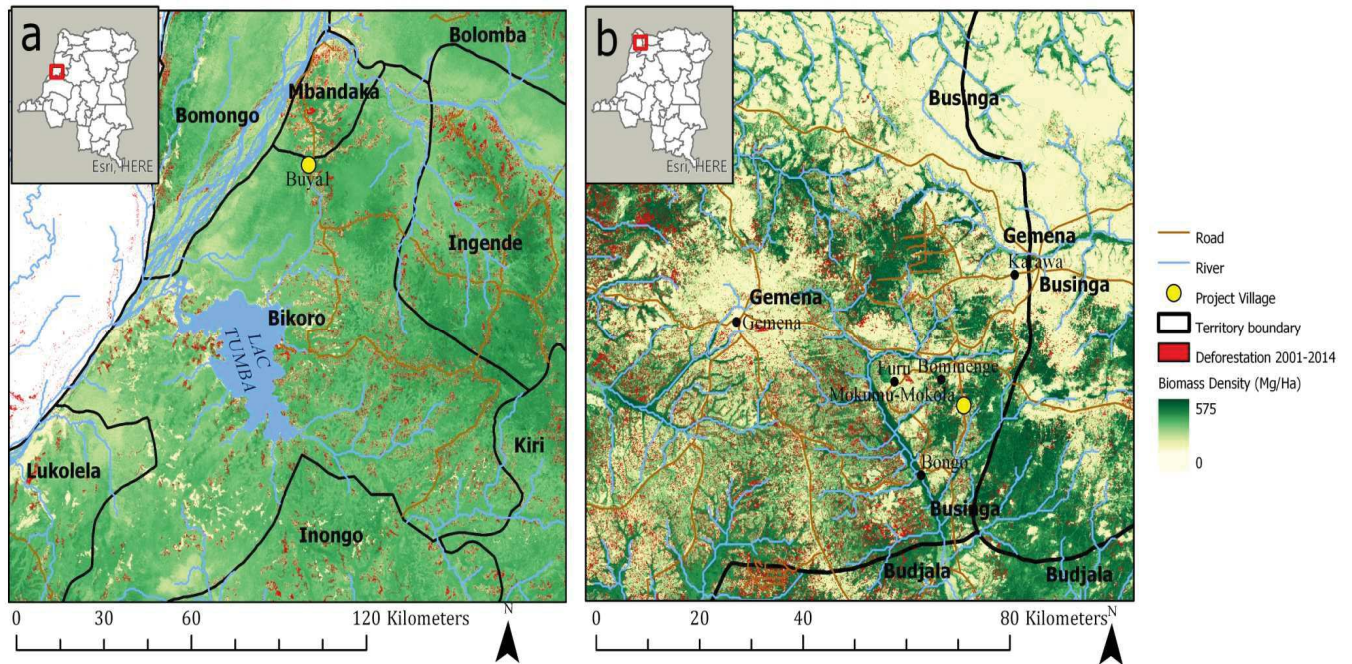
Map 2. Deforestation (2001-2014) and Biomass Density (2000) for A) Bikoro REDD+ Pilot Site and B) Gemena REDD+ Pilot Site. Source, Chapman (2016)

landscape is swamp forest where it is difficult to extract timber and to convert forestland to agriculture. This swamp forest has high forest biomass due to difficult navigation while the dry forestland are constantly being deforested. Despite the swampy nature of the forest, the territory on the margins of the navigable channels of the Congo River provides easy transportation to concessionaires. In Gemena, the forest landscape is characterized by dryland dense humid rainforest that transitions into evergreen savannah woodland and grasses. Many of the local people in Gemena confirmed to us in focus group discussions that it is very easy for them to use fire in portions of forests opened by artisanal logging to establish agricultural land.

Table 3. Percent biomass and forest area loss 2001-2014 in REDD+ Pilot territories

REDD+ pilot sites	Biomass loss in % (2001-2014)	Area loss in % (2001-2014)	Total biomass loss (TG) (2001-2014)
Bikoro	3.95	4.05	11.03
Gemena	9.51	7.65	23.46
Équateur	3.54	3.79	362.17

4.2. Proximate causes of deforestation by households

Regarding the proximate causes of deforestation, two main land use activities are important in the surveyed villages: agricultural expansion and wood extraction (artisanal logging and charcoal production). In this section, we describe these activities and the factors that influence household decisions and capacity to clear forestland.

4.2.1. Agricultural expansion

For all households included in the study, agriculture was central to their livelihoods. Predominantly through the practice of shifting cultivation. The mean agricultural land holding in both areas together was 2.5 hectares. Agricultural land holdings are generally acquired by inheritance although some households (12.3% of the total surveyed households) rented farmland. Renting occurred more in Bikoro than in Gemena. There are many migrants in Bikoro surveyed villages including Pygmies who lack customary claims to land. Many households (46.4%) cultivated on forestland that have been converted into permanent agricultural land for more than 10 years while some households still clear forest (see Table 4).

Table 4. Mean forestland cleared and the land conversion types in the study area (2012-2013)

Households land conversion types	Bikoro (N=180)	Gemena (N=180)
Owned cropped land*	1.01±0.64	0.53±1.05
Rented cropped land	0.24±0.64	0.13±0.66
Cleared forest land per year	0.29±0.87	0.37±0.99

*N=360, * indicates significantly difference between pilot sites (p < 0.05)*

81.7% of the households reported that they cleared forest in the year leading up to the survey (2012-2013). More households in Gemena (85.6%) reported clearing forest compared to Bikoro (77.8%). The swamp forest in Bikoro hinder forest clearing for agricultural expansion. Recent demand to improve food security in Bikoro have led some households, with support from the FAO/WFP food security project, to clear portions of the swamp forest for rice cultivation. The forest cleared are formally owned by the state, but in practice used and managed under customary arrangements in which land allocation for agriculture is based on ethnicity or renting. All households that cleared forest indicated that the main reason was to grow crops. Almost half of the households (46.1%) reported that they cleared secondary forest. This practice was dominant in Bikoro (64.5%) and in Gemena (27.8%). The practice of clearing primary forests was more widespread in Gemena (50%) compared to Bikoro (25.6%) due to the swampy nature of the forest in Bikoro.

Information gathered from focus group discussions confirmed that there are two types of shifting cultivation practiced in the project areas, long and short rotation. Both the cultivation and

fallow durations of the two systems vary between the pilot sites. The long rotation fields are cleared either from forests that have been logged or from secondary forests that have been left to fallow for more than 10-20 years. Portions may also come from primary forests. The duration of cultivation is 3-6 years. The short rotation fields are cleared from land left to fallow for a relatively short period of 1-6 years. Burning is always used in the clearing process, as it is the only way to properly clear and prepare the land for cultivation.

4.2.2. *Timber extraction by households*

Apart from collecting firewood and poles for construction, many household members are engaged in artisanal logging operations as laborers. Artisanal logging is heavily practiced in both pilots to supply the local markets with wood for construction. Information gathered from the interviews and focus group discussions confirmed that a majority of the artisanal loggers operate without permits, but negotiate their access and use rights with customary authorities. In the Bikoro site, artisanal logging takes place in logging concession areas since it overlaps with communities' forest use areas.

Some households also harvest timber to produce charcoal. In the surveyed villages 31.1% of the total households interviewed were engaged in charcoal production to supply the towns. Charcoal is the main energy source for heating and cooking in the towns. It is causing additional pressure on the forests of the project sites. Charcoal production has become more important for the local people as it gives them more income compared to working as laborers in artisanal logging. There is an increasing number of charcoal merchants in the area motivating the local people to produce charcoal because of its high demand as a pose to a byproduct of land clearing for farming. For example, new forest areas are now being opened specifically to produce charcoal. In Gemena, charcoal production is predominantly in the villages closer to Gemena town where transportation of charcoal is less of a burden. In Bikoro, the logging company provides easy and low cost transportation of charcoal to Kinshasa, and the main road linking the villages to Mbandaka makes it easy to transport charcoal there.

4.3. Factors influencing households' decisions and actions to clear forest land

Using our analytical framework, we have tried to understand how the households and individuals living in the study area make decisions and act regarding their land use activities in the forests (agricultural expansion and timber extraction). These decisions and actions are assumed to be influenced by socio-economic characteristics of households, technology (assets), infrastructure, community socio-economic factors and institutional contexts.

The results of the econometric analysis are presented in Table 5 for the step 1 analysis, household decision to clear forest or not (Logit model), and Table 6 shows results for the step 2 analysis, how much was cleared (OLS model). According to Table 5 focusing first on the results for both pilots (total sample), none of the variables on household characteristics affect the decision to clear forests. We however, observe interesting difference between the pilots. In Bikoro, the availability of male labor within the household influence decisions to clear forest, while in Gemena, high availability of female labor within the household increase the likelihood of forest clearing. As explained above, the forest in Gemena is dryland, dense humid transitioning into

evergreen savannah, making clearing using fire easy compared to Bikoro, where it is dense humid swamp forest with a large area permanently inundated. This makes clearing very difficult requiring hard labor, often done by men.

Table 5. Logit regression model for households' decision to clear forest in the study area

HH cleared forest in the past 12 months (Yes/No)	Study area (total sample)		Bikoro		Gemena	
Independent variables:	Coef	S.E	Coef	S.E	Coef	S.E
Household characteristics						
Gender of HH head	0.313	(0.637)	0.092	(0.767)		
Age of HH head	0.007	(0.013)	-0.014	(0.020)	0.021	(0.026)
Education of HH head	0.150	(0.523)	0.521	(0.824)	-1.075	(0.966)
Number of males (16-60 years)	0.167	(0.145)	0.402*	(0.212)	0.102	(0.181)
Number of females (16-60 years)	0.275	(0.169)	0.123	(0.194)	0.967***	(0.352)
Migration	-0.280	(0.355)	0.486	(0.559)	-0.014	(0.717)
Household endowment variables						
HH total land holding	0.095	(0.116)	-0.207	(0.164)	0.558**	(0.225)
HH total land rented[1]	0.222	(0.344)	0.482	(0.456)	-	-
HH total land not in use	0.173**	(0.068)	0.245**	(0.104)	-0.024	(0.167)
HH Assets—farm tools	0.003	(0.009)	0.005	(0.011)	0.008	(0.019)
HH total Income	0.001	(0.001)	0.000	(0.001)	0.018**	(0.009)
Social capital						
HH belong to farmers groups	0.563	(0.349)	1.635***	(0.537)	-0.975	(0.784)
HH belong to religious groups	-0.624*	(0.377)	-0.356	(0.622)	-1.451**	(0.734)
Contextual and institutional variables						
HH distance to forest	-0.014*	(0.008)	-0.010	(0.013)	-0.017	(0.011)
Market orientation	1.504**	(0.703)	1.879*	(1.132)	-0.851	(1.462)
HH experience shock	0.958**	(0.372)	1.296**	(0.531)	1.114*	(0.654)
Community distance to market	-0.012	(0.010)	-0.023	(0.017)	-0.030	(0.022)
Presence of logging 2008-2013	0.916***	(0.219)	1.183***	(0.365)	1.100**	(0.437)
Presence of state rule in the pilots	-0.550**	(0.254)				
No of observation	311		154		148	
Pseudo R^2	0.230		0.281		0.3667	

Numbers in parentheses are Standard errors; Significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$
1) Variable omitted in Gemena model due to collinearity

Among the households' endowment variables, land abandoned to fallow increases the likelihood to clear forest in Bikoro, but not in Gemena. People depend entirely on natural soil nutrients for farming. Hence, new portions of forestland are cleared to mine nutrients. In Gemena, we observe

that total land holding and total income affects the decision to clear forest. In terms of household social capital, we observe that membership in religious groups negatively influence the decision to clear forest in the Gemena pilot. This finding contradicts the information from focus group discussions, which confirmed religious groups as a source of labor and other assistance to members in time of need. In Bikoro, household membership in farmer associations affect decisions to clear forest positively. Many farmer associations exist in the survey villages of Bikoro, and they assist members for farming activities. No grassroots village association was reported in the surveyed villages of the Gemena pilot site.

The contextual factors also influence the decision to clear forest. We observe that households are more likely to clear forests when they have experienced recent shocks. In the study area, with limited alternative livelihood activities, forest clearing to boost agricultural output is a coping strategy, commonly experienced elsewhere (Wunder et al. 2014). Households that live further from the forest are less likely to clear forest compared to those that are close. In addition, commercialization of agricultural products increase the likelihood for forest clearing.

The presence of logging activity from 2008-2013 significantly affected decisions to clear forest and the effect is substantial. This confirms our argument that commercial logging enables forest clearing as it enhances local access to the forest for agriculture. Importantly, the presence of state rules (effective regulation) seems to be effective in reducing local people's likelihood to clear forest in general. State presence is high in Bikoro villages compared to Gemena villages due to relatively accessible roads and logging concessions.

Focusing on the step 2 analysis, the size of forests cleared, a different picture emerges (Table 6). None of the contextual variables shows significance in affecting total area cleared. Whilst logging enables forest clearing by opening up the forests, the actual size of forest cleared depends on household characteristics and endowment variables. Moreover, while state rule influences the decision to clear forests, the actual size of forests cleared is regulated by customary arrangements. We see the age of the household head has a significant and negative effect on cleared area. This might be because the physical strength of the household head to clear forest decreases with increase in age. Household assets are positively associated with the area of forest cleared, but it is difficult to ascertain from the data if this factor is a cause or an effect. Household assets are an indicator of wealth, whilst having more assets might mean that a household has more resources to apply to forest clearing. A larger land holding also means greater capacity to generate income, adding to wealth and therefore assets. Total area of land abandoned to fallow is significant in Bikoro, but not in Gemena. As already explained above, the frequency of forest clearing is high in Bikoro since the regeneration process and fallow period are relatively short for the soil to restore its nutrients after use.

Household membership in religious groups has a significant negative effect on the size of forest area cleared. Distance to forest has a significant negative effect on the area of forest cleared in Gemena. This is because the variance of proximity to forest resources is greater in Gemena than in Bikoro. While household shocks do not significantly affect the total area in any of the pilots, it was significant factor influencing the basic decision to clear. Most of the shocks reported were in the form of labor loss (death/sickness) and forest clearing is labor intensive. Therefore, whilst the basic decision to clear is influenced by the experience of a shock, the amount of forest cleared depends on the available household labor resources.

Table 6. OLS regression model for how much forest was cleared (ha) on average per year by households in the study area

Area of forest cleared (Ha)	Study area (total sample)		Bikoro		Gemena	
Independent variables	Coef	S.E	Coef	S.E	Coef	S.E
Household characteristics						
Gender of HH head	0.079	(0.199)	0.229	(0.263)	-0.139	(0.334)
Age of HH head	-0.007**	(0.004)	-0.008	(0.006)	-0.008	(0.005)
Education of HH	-0.059	(0.153)	0.060	(0.264)	-0.095	(0.210)
Number of Males (16-60 years)	0.000	(0.023)	0.026	(0.035)	-0.031	(0.036)
Number of Females (16-60 years)	0.084***	(0.030)	0.065	(0.050)	0.116***	(0.042)
Migration	0.079	(0.199)	0.158	(0.193)	0.056	(0.154)
Household endowment						
HH total land holding	0.040	(0.026)	0.048	(0.055)	0.058*	(0.031)
HH total land rented	0.238***	(0.080)	0.241*	(0.142)	0.178*	(0.102)
HH total land not in use	0.032*	(0.018)	0.078**	(0.030)	0.005	(0.025)
HH Assets—farm tools	0.020***	(0.002)	0.022***	(0.003)	0.018***	(0.005)
HH total Income	0.000	(0.000)	0.000	(0.000)	0.000	(0.001)
Social capital						
HH belong to farmers groups	0.074	(0.110)	0.085	(0.178)	0.067	(0.154)
HH belong to religious groups	-0.219*	(0.123)	-0.201	(0.206)	-0.197	(0.166)
Mediating/vulnerability factors						
HH distance to forest	-0.003	(0.002)	0.005	(0.005)	-0.005*	(0.003)
Market orientation	-0.127	(0.240)	0.178	(0.402)	-0.195	(0.356)
HH experience shock	0.154	(0.127)	0.271	(0.189)	0.001	(0.193)
Community variables						
Community distance to market	0.002	(0.003)	-0.001	(0.006)	-0.001	(0.004)
Presence of logging 2008-2013	-0.039	(0.068)	-0.112	(0.124)	0.038	(0.090)
Institutional variable						
Presence of state rules in the pilots	0.096	(0.071)	-	-	-	-
No of observation[1]	251		117		134	
R^2	0.368		0.515		0.280	

Numbers in parentheses are Standard errors; Significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

1= the number of observation includes only households that cleared forest in the past 12 months

4.4. The underlying causes of deforestation in the project area

While we in section 4.3 looked at key underlying causes at the households and community level, we will now turn to an assessment of the broader context and fundamental forces underpinning local actions. Using the analytical framework described earlier, these underlying driving forces are categorized into socio-economic factors operating beyond the community level, policy and institutional factors and the socio-political process and actions of political actors.

4.4.1. Socio-economic factors

Household income from our statistical analysis above does not influence forest clearing because the sampled households are overwhelmingly poor. Information from the interviews and field observation shows that economic poverty is among the main socio-economic factors that drive local actors (individual and households) decisions and actions to clear forests. Economic poverty results from lack of alternative livelihoods and limited opportunities for income generation, lack of basic infrastructures and services, as well as poor living conditions. The limited capacity of the state to provide alternative livelihoods and development services have forced the local population to continue shifting cultivation as their main surviving strategy. Poverty is also the result of insufficient food production, extremely low income, as well as social deprivation and a lack of empowerment of the local population. A respondent from a men's focus group in Gemena noted that "*We clear the forest year in year out to produce food crops to eat and sell for cash, but we are still very poor. We don't have roads to sell our products, we lack money to buy basic farm tools, our production is very low and we don't have any other job but continue to live from our forestland*".

Agricultural through shifting cultivation is the main source of household income in the project area (Table 7) followed by charcoal production and NTFPs. There is great variation in the income sources between the pilot sites. Charcoal was the second largest income source in Bikoro while NTFPs was the second largest source in Gemena. The population in Bikoro also generates income from fishing and logging activities. Paid labor, commerce and wages are the least important sources of household income in the project area.

Table 7. Mean households' income in the project area ($) non-normalized

Household income sources	Bikoro (N=180)	%	Gemena (N=180)	%	Total (N=360)	%	P-value
Agriculture	474.6±514.8	75.8	224±347.1	81.3	349.3±456	77.5	0.000
Charcoal	68.1±127.5	10.9	10.9±30.8	3.9	39.5±96.9	8.8	0.000
NTFPs	35.3±91.7	5.6	27.1±42.4	9.8	31.2±71.5	6.9	0.277
Fishing	16.4±25.2	2.6	2.4±7.6	0.9	9.4±19.9	2.1	0.000
Logging compensation[1]	19.1±90.1	3.1	0	0	9.6±64.3	2.1	0.005
Paid labor	2.2±14.6	0.3	5.3±13	1.9	3.7±13.9	0.8	0.034
Commerce	7.3±29.7	1.2	5.5±24.7	2.0	6.4±27.3	1.4	0.531
Wages	3.1±15.3	0.5	0.3±4.1	0.1	1.7±11.2	0.4	0.018
Total income	626±550	100	275.5±355.6	100	450.8±494.7	100	0.000

1) The logging compensation considered here are for the concessions

However, cash income from agriculture is low due to limited access to markets. In addition to the poor state of roads, local middlemen often imposed unfair prices with the excuse of bad roads. Accessing markets is also difficult due to the imposition of official and unofficial local taxes and police harassment to extract bribes reducing the income from agricultural products sold.

4.4.2. Government policies and institutional factors

The 2002 Forest Code classified the forest into different uses (GDRC 2002). These classifications do not have any practical influence as land use activities are undertaken irrespective of them. This has created competing claims and conflicts at the local level. This is common in Bikoro where many villages are located within forest concessions.

In addition, the government policy of forest governance has two institutional effects that drive deforestation in the study area: 1) inconsistency of the Forest Code and weak enforcement leading to ineffective forest management and; 2) conflicting forest tenure (coexistence of statutory and customary tenure). Inconsistency and weak law enforcement is related to the inability of the government to execute policies and enforce the rules/laws clearly and transparently. The non-implementation of the land use classification in the Forest Code and the lack of clarity of the authorities to issue artisanal logging permits affect logging practice and enables more forest loss through logging. Interviews with officials at the Provincial Ministry of Environment in Equateur highlighted conflicts between the central and provincial governments around the new division of powers. Decentralization reforms require the transfer of forest royalties and powers to allocate artisanal logging permits to provincial authorities, but the central government is reluctant to relinquish these powers.

Weak law enforcement in the forest sector is partly due to a lack of political will and means among politicians and bureaucrats of the Ministry of Environment at the national level who have the responsibility to manage the forest. The legal framework of forest management is centralized, and ineffective planning and coordination coupled with few qualified government personnel result in a lack of capacity to manage the forests. Interviews with officials at the Provincial Ministry of Environment in Equateur reveal that very few officers have education beyond secondary school and access to civil service employment is based on political patronage. Low salaries, which are paid late or irregularly weakens the motivation of officers and affects the quality of their work.

These forestry officers supplement their low salaries through bribery and corruption. This is clearly demonstrated via the allocation of artisanal logging permits and mechanisms of enforcing the laws at the local level. These processes are driven by vested interests and rent seeking behavior of the administrative authorities while ecological concerns regarding forests are undermined (see Samndong & Vatn forthcoming). From the interviews, officials of the Ministry of Environment cited low wages and insufficient resources for monitoring as excuses for weak law enforcement. These explanations are interlinked with the unwillingness of both the central government and local officials to enforce the laws and to monitor logging activities. The benefits they derive from logging operators through bribes demotivate them to enforce the laws. Other studies have also documented this kind of corruption in the forestry sector of the DRC (Benneker 2012; Global-Witness 2012; Trefon 2011).

Regarding conflicting forest tenure, we note that the implementation of state rules on forests often conflict with customary rules revealing a situation where neither state nor the customary rules are effective in to protecting forests. The state rules only grant the local population use rights to forests and restrict them to exploit timber for national commercial purposes while the customary rules allow local population to exploit timber for local markets in their forests (see Samndong and Nhantumbo 2015). The conflict between state and customary rules has created a situation where multiple authorities allocate rights for timber exploitation. While local state

authorities grant logging permits to particular logging operators, customary authorities also grant logging rights to local timber operators (see Samndong & Vatn forthcoming).

The present situation of ambiguity in forest tenure and weak enforcement of state rules in the Bikoro study area can be linked to the history of forest governance. Participants in focus group discussions mentioned that large portions of traditional land were taken over by the colonial administration in the early 1920s that later converted them to plantations and logging concessions. Although there was some local resistance, the arrival of colonial administration provoked displacement and resettlement of some villages along newly created roads. This practice is still witnessed today as the traditional lands of the local population are often allocated to forest concessions without their consent.

4.4.3. *Socio-political factors*

The relationship between the political and economic actors in the DRC are generally based on clientism (patron-client relations) where by the political actors are vested with institutional powers and economic actors with strategic powers (material resources) as documented in these studies (Oyono & Nzuzi 2006; Seyler et al. 2010; Trefon 2011). Interviews with the regional parliamentarians revealed that many political decisions both at national and regional levels are based on informal relationships (wealth, family ties, ethnicity and religion) and often involve reciprocal favors, which contribute to corruption. This political culture often known as the "politics of the belly" (Bayart 1993), in which economic actors are protected by their patrons, is deeply embedded in the lifestyle of many Congolese politicians and bureaucrats.

Furthermore, the political actors' attitude towards economic growth is an important underlying force behind deforestation (Colchester & Lohmann 1993). The government has stressed economic development and growth as a necessary ingredient for stability and national integration (GDRC 2012). International actors such as the World Bank and IMF also support the ideology of economic development and growth. According to these actors, the forest (natural capital) is a valuable resource useful for generating foreign exchange to finance economic development regardless of the social and ecological consequences. Economic development is important for the local communities and forest protection, but many political actors hide behind this agenda to extract public funds for their personal interests (see Trefon 2011). This keeps the locals in constant poverty and more deforestation.

The moratorium on the allocation of new forestry concessions issued in 2002 was to reduce corruption in the allocation process. Many government officials interviewed at the Ministry of Environment were unhappy with the moratorium because it has reduced their opportunity to gain income from economic actors in the concession allocation process. On the other hand, civil society organizations interviewed, highlight the fact that the moratorium has promoted a change in timber exploitation with the increase of artisanal logging companies and abuse of artisanal logging permits, with a resulting negative effect on forest covers and social safeguards.

5. Discussion and conclusion

5.1. What is driving deforestation in Equateur Province?

Our results demonstrate that agricultural expansion through shifting cultivation is the main proximate cause of deforestation in the study area. It is mostly induced by logging activity the "logging-shifting cultivation tandem" of deforestation(Angelsen 1995 p1718). Logging activity opens the forest with roads including areas that were formerly inaccessible. Although there is a moratorium on the issuing of new logging concessions, artisanal logging operation has increased in the pilots, opening up of new forest areas and making them conducive for shifting cultivation (see Global-Witness 2012). Logging is considered the 'beginning of the end' of tropical rainforest (Cleuren 2001). Other studies have revealed that logging is the most extensive land use activity in the Congo Basin—opening up the forest and making it attractive for agricultural expansion (Laporte et al. 2007; Putz et al. 2008).

Local people consider shifting cultivation as the most sustainable land use strategy given the limited demographic pressures, labor, abundant forestland, poor technology and limited access to markets. This is also found elsewhere (Angelsen 1995; Ickowitz 2006; Mertz 2009; Nielsen et al. 2006; Van Vliet et al. 2012; Zhang et al. 2002). Households in the study area clear forest because there is no alternative income generating activity. Households with more female members (labor), farm assets, ability to rent more forestland and high social capital clear more forest. These findings point towards a Chayanovian-type of household behavior (Caldas et al. 2007; Hersperger et al. 2010; Pacheco 2009).

The logging-shifting cultivation proximate cause of deforestation in the study area is strongly driven by both economic poverty and policy/institutional factors of forest governance in the DRC. The conditions of poverty[2] such as the use of rudimentary tools, insufficient food production and social deprivation reflects the factors that drives land cover and land use change in a peasant economy (see Coomes et al. 2011). Poverty is also linked to the political and institutional structures of forest governance. The management of forests in many regions have contributed significantly to poverty alleviation especially in regions where community forestry is applied (Chhetri 2009; Topa et al. 2009). Historically, forest management in the DRC has not contributed to poverty alleviation (Debroux et al. 2007). Timber exploitation tends to benefit a small minority (often political actors, powerful economic actors and military officials) and its contribution to poverty alleviation is insignificant (du Preez & Sturman 2009). Many development initiatives including aid assistance to combat poverty have offered marginal benefits to the rural poor due to the rent seeking political culture of Congolese politicians and bureaucrats (see also Trefon 2011).

In addition, the lack of effective land use policy in the DRC, coupled with inconsistency in the institutional structures of forest governance, influence how the forest is used and managed locally. Weak enforcement of the Forest Code and conflicting forest tenure, with the presence of multiple authority structures for the issuing of logging rights, further encourages the opening forest

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[2] Poverty as an underlying cause of deforestation may have profound implications for policy formulation depending on the context. In our context, poverty is as the result of unequal power structures.

area for shifting cultivation. The political actors' quest for economic growth, by using the forest as a natural capital, also creates additional pressure for forest clearance.

5.2. Deforestation and REDD+ Strategy in the DRC

The above findings emphasize the importance of the political and institutional driving forces of deforestation. These factors are less emphasized in the REDD+ policy documents of the DRC (GDRC 2012; Mpoyi et al. 2013). As a result, the actions to curb deforestation in these policy documents are related to policies prescribed for stage one of the forest transition approach (Angelsen & Rudel 2013). These policies encourage the expansion of protected areas, shifting deforestation for agriculture use from dense forest to marginal zones and increase the productivity of shifting cultivators through sedentary agricultural practices (Galford et al. 2015).

Many have argued that rigorous analysis of drivers and actors of deforestation is necessary for clear policy responses and actions to curb deforestation (Behrendt et al. 2013; Tegegne et al. 2016; Wehkamp et al. 2015). This study reveals that curbing deforestation in the context of REDD+ will depend on addressing the political and institutional factors that drive deforestation in the Équateur province. Such actions will require reforming the forestry and agricultural sectors emphasizing effective land use planning, capacity building for effective law enforcement, secure forest tenure for communities and establishing robust and accountable community based structures.

While such processes require time, the recent enactment of the community forestry law of the DRC provides some opportunities to address these political and institutional factors. Using the framework of community forestry, REDD+ initiatives could address aspects of the policy/institutional driving forces of deforestation through recognizing community rights, reinforcing community based forest management, establishing community land use planning, build local capacity and promote alternative economic opportunities for the locals. These measures have been undertaken in early REDD+ initiatives of other countries (Blomley et al. 2016; Dyngeland et al. 2014; Shrestha et al. 2014; Sunderlin et al. 2014).

In addition to the political and institutional factors, curbing deforestation in the context of REDD+ also depends on the dynamics between biomass loss and forest area loss. This is because not all forest types contain the same amount of woody biomass. Hence, actions to tackle the proximate cause of deforestation in the context of REDD+ such as intensive agricultural practice, landscape management and restoration of degraded forestland might be prioritized in regions with high risk of forest biomass loss such as Gemena. Moreover, actions to curb deforestation in the context of REDD+ such as concentrating agriculture on fallow land, agroforestry, sustainable forest management and forest conservation could be applicable in regions of high forest area loss, but lower forest biomass loss such as the Bikoro area. Improving communities' agricultural practices through the adoption of new techniques and introduction of high yield crops will be important while promoting agricultural activities in the wetland swamp forest such as rice cultivation might render those forests attractive for agricultural expansion in the future.

Overall, the findings from this study confirm the emerging message in the literature that, the drivers of deforestation are contextual and occur as a result of complex context specific interactions involving a multitude of proximate and underlying forces. Policies need to be crafted with the flexibility to account for diverse specific context. The study shows that the political and

institutional factors of forest governance are the main underlying factors that drives the local people decisions and actions to clear forest. The study suggests that addressing these political and institutional factors of forest governance as a strategy to curb deforestation is crucial for effective REDD+ implementation in the long run. While this option may require time and resources, the new community forestry law of the DRC provides an opportunity for REDD+ initiatives to address some of these underlying causes of deforestation at the local level. These actions will require establishing effective cross-sectoral emission reductions and land use planning, robust and accountable community based institutions and alternative economic opportunities for rural people. Such institutional arrangements require assessing existing formal and socially embedded institutions of forest governance, their cultural realties and evaluate options for more effective governance of forests that harness the capacity and social legitimacy of customary and other local structures.

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PAPER 3

Competing tenures: Implications for REDD+ in the Democratic Republic of Congo

Raymond Achu Samndong*[1] and Arild Vatn[1]

[1]Department of International Environment and Development Studies, Norwegian University of Life Sciences (NMBU)

*Correspondence: raymond.samndong@nmbu.no/rayasboy@yahoo.com

Abstract

The capacity of DRC forests to sequestrate carbon has attracted interest from the international community to protect forests for carbon storage and alleviate rural poverty by establishing REDD+. Using information gathered from interviews, focus groups, field observations, and policy document analysis, this paper demonstrates that REDD+ is not well adapted to the institutional structures of forest governance in the DRC, including both statutory and customary tenure. The lack of harmonization between these systems has created a situation of competition between state and customary authorities. This has created opportunities for powerful actors to 'shop' between the two systems to attempt to legitimize their expanded use and control over forest resources. As the REDD+ process evolves from a preparation to an implementation phase, competing institutional structures are creating problems for ensuring an effective REDD+ regime. These problems may also negatively affect the distribution of costs and benefits. While the newly enacted community forest law provides an opportunity to recognize customary rights to forestland, the lack of functional local government at the district and village levels has prompted REDD+ pilot project organizers to establish new village organizations for REDD+.

Keywords: forest tenure, property rights, authority structures, REDD+, the DRC

1. Introduction

The Democratic Republic of Congo (DRC) hosts some of the world's most carbon-rich and biodiverse forests, covering more than 60% of the national territory with an estimated 17 billion tons of carbon sequestered (Laporte et al. 2007). The current deforestation rate there is estimated at 0.27% per year (GDRC 2012). This has motivated the international community to develop several incentive-based policies that aim to increase the provision of public goods from the forest

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(carbon and biodiversity) by explicitly valuing these goods and incentivizing people to protect them through different means, including under the umbrella of REDD+ (Reduced Emissions from Deforestation and Forest Degradation). It is assumed that policies like REDD+ can efficiently conserve forests as well as improve the livelihoods of forest-dependent communities where poverty tends to be pervasive (Angelsen 2008; Marfo et al. 2012; Vatn et al. 2009). Achieving these goals depends greatly on the institutional structures that affect forest practices at the local level.

Implementing REDD+ requires changes in property rights to forests with clear definitions around who is responsible for reducing deforestation and who becomes eligible for compensation for any lost income. This is not an easy task in the DRC, where the forest is governed by a statutory tenure that co-exists with customary tenure. Colonial and post-colonial policies on forest governance have been based on substituting the customary tenure systems with the statutory tenure systems towards pursuing the creation of a modern economy based on market principles (Diaw 2005; Mamdani 1999; Unruh 2008). This transformation has resulted in conflicts between state agents and traditional leaders around who controls (and should control) access to the forests and its resources (Bruce 1998; Huggins 2010). Although policy debates in recent years have swung back towards recognizing, adapting, and formalizing customary forest tenure, institutional pluralism,[1] including the presence of different authorities, has maintained and contributed to a general fuzziness of institutional framework for forest governance (Diaw 2005; Oyono & Nzuzi 2006).

This paper aims to assess the importance of both customary and statutory forest tenures, the adaptations it produces among local actors, and implications of these aspects for the implementation of REDD+ in the DRC. The paper responds to the following questions: 1) How does institutional pluralism affect local forest use? And 2) What are the effects of this pluralism on the implementation of REDD+? Empirical data for this study come dominantly from two REDD+ pilot project sites in the Equateur province along with analysis of policy documents.

In the following, section 2 provides the theoretical framework of the paper by drawing on institutional theories of forest governance. Section 3 presents the geographical context and the

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[1] In this paper, we used the term institutional pluralism instead of legal pluralism to denote the existence of two or more institutional structures in one social space (Griffiths 1986).

research methods. Section 4 presents the nature and dynamics of both customary and statutory tenure of forest governance in the Équateur province. Section 5 analyzes adaptations of local actors operating within the institutional structures described in section 4. Section 6 discusses the findings in relation to the development of REDD+ projects in the DRC. Section 7 summarizes the main findings and recommends future policy actions.

2. Conceptualizing tenure and property rights to forests

Forest tenure is a social contract, whether defined in customary or statutory terms, that determines who can hold and use the forests for how long and under what conditions (Sunderlin et al. 2009). Tenure encompasses property rights, understood as the control over a benefit stream, and the ability to call upon the collective to stand behind one's claim to this benefit stream (Bromley 1991: 15). Tenure therefore, embody both property rights and the authority structures that enforce and legitimatize claims or control over benefit streams. Customary tenure in this context is typically a set of rules that govern community allocation – access, use, and transfer of forests – as enforced by customary authorities in accordance with the custom and tradition of the community. On the other hand, statutory tenure is a set of rules and regulations enshrined in formalized legislation, decided by a legislator, that determines who can hold and use the forests for how long and under what conditions (Freudenberger 2011). While Freudenberger (ibid.) makes the distinction that customary tenure depends on unwritten rules and statutory tenure on written ones, the key point involves differences in authority structure.

Property rights to forests are recognized not as unitary concept of 'ownership' but as a 'bundle of rights' often involving groups of people with multiple and simultaneous rights and hence a shared interest in a common resource (Barry et al. 2010; Galik & Jagger 2015; German et al. 2014; Meinzen-Dick & Pradhan 2002). This bundle of rights may be broken down along a continuum from access, to withdrawal, management, exclusion, and alienation rights (Schlager & Ostrom 1992). Property rights are also differentiated among a variety of rights holders conceptualized into three categories—states, communities, and individuals (Barry & Meinzen-Dick 2008; Larson et al. 2008). The authority that defines the bundle of rights specifying property is crucial to the sense of legitimizing or enforcing these rights in practice. Hence, different strategies to access and benefit from forest resources transcend statutory property rights and may rely on different types of authority (Sikor & Lund 2009).

In this paper, we use the environmental governance framework developed by Vatn (2011) to conceptualize tenure and property rights to forests in the context of institutional pluralism. These structures of forest governance include actors and institutions (Figure 1). Institutions include rules regarding political decision-making—constitutions, gubernatorial decrees, collective choice rules or customary laws. These decisions create the second type of institutions—i.e., those governing the economic process—like property rights. Such rights comprehend three elements: user rights, control rights, and alienation rights. User rights are typically access and withdrawal rights as defined by Schlager and Ostrom (1992). Control rights, also referred to second order rights, determine use rights and include management, exclusion, transaction, and monitoring rights
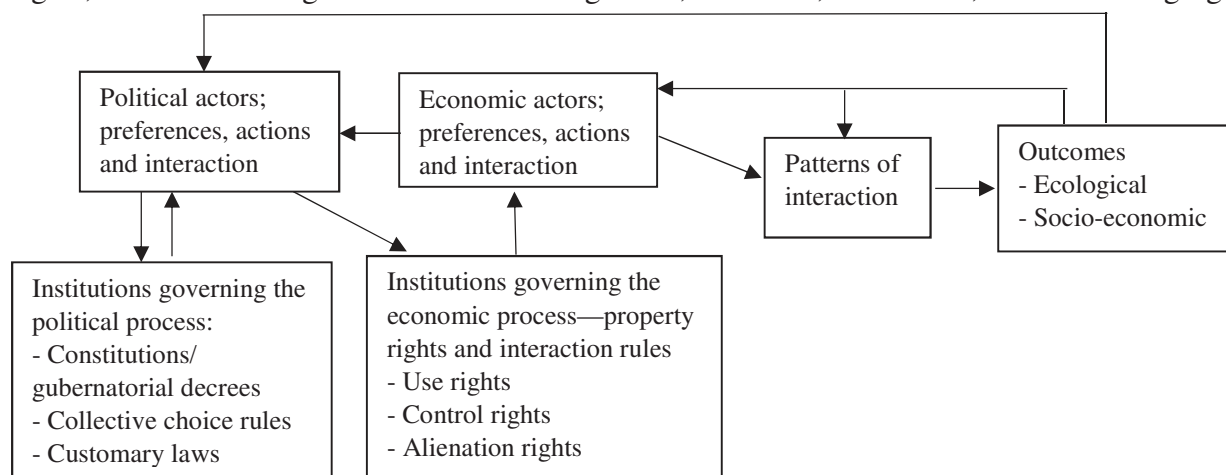
(Sikor 2014). Alienation rights are the rights to rent, sell, or transfer rights to others.

Figure 1. A framework for analyzing forest governance (adapted from Vatn 2011)

Central to our analysis are political and economic actors. Economic actors include local farmers, loggers, and the state as forest owner collecting revenues through the allocations of timber concessions, but also civil servants when obtaining income from bribes. Political actors include government, politicians, government agencies involved in forest management, administrators, and traditional authorities who define and enforce rules of use and control of forest resources. The political actors are central to our analysis because they have the authority to define and enforce property rights.

In this context, there are two principal types of political actors: state authorities and traditional authorities. The coexistence of the two allows economic actors to choose which authority structure to support their claims. The power of state authorities are enshrined in either

the constitution, laws, or gubernatorial decrees, while the power of the traditional authorities are based on customary laws, i.e., rules sanctioned by local customs and traditions negotiated and renegotiated over time and space (Agbosu 2000; Diaw 2005).

The ways that political actors access their positions are complex in the DRC. State authorities are appointed through elections and political appointments, the latter often based on patron-client relationships (Trefon 2011). As formal institutions are generally weak, patron-client relationships define who holds political positions. This is true in the forestry sector as well (Debroux et al. 2007; Trefon 2010). Traditional authorities are appointed through rules based on cultural processes linked to the inheritance of genealogical rights (Diaw 1997). Economic actors may interact with political actors through exchange (the state and logging companies or traditional authorities and local loggers), through command (by state and individuals or communities) granting formal property rights, or by following local/customary rules (Vatn 2011).

To understand how economic actors deal with these overlapping and competing institutional structures to have access to forest resources in Équateur province, we employ the institutional bricolage approach developed by Cleaver (2002 2012). It describes the process by which "people consciously and non-consciously draw on existing social formulae (…) to patch or piece together institutions in response to changing situations" (Cleaver 2012: 10). Through this process, actors create space to interpret and re-interpret existing institutions enabling them to interact, negotiate, and compete with each other to access forest resources (Cleaver 2002; de Koning 2011). To create the necessary space to act, actors need to possess certain power resources or mechanisms of access (Cleaver 2002). These power resources are attributes that enable or constrain actors to influence access to forest resources. In forest governance, an economic actor may draw upon different power resources to make claims over forests such as their socio-political position — for example, an official position, formal function, kinship relations — a social network, economic resources such as wealth, or personal attributes such as knowledge, eloquence, self-confidence and strength (Cleaver 2002).

In the DRC, REDD+ strategies and pilot projects are developed in this context of competing institutional structures for forest governance. Consequently, any intervention aimed at promoting sustainable forest management and conservation will have to take into account the existing formal and informal rights over forest resources, and the role of all actors involved. This paper assesses the nature and dynamics of these two conflicting institutional structures of forest governance, how

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local actors' respond to them in legitimatizing use and control rights over forests, and how this might influence the working of REDD+ on the ground.

3. Geographical context and research methods

The data for this paper was collected from two REDD+ pilot sites in the Équateur province of the DRC (Figure 2). The province has recently been divided into five new provinces as a result of decentralization. The first pilot site is located in Buya 1 village of Bikoro territory southwest of the old Equateur province, which is now the new Équateur province. Its dominant vegetation is equatorial swamp rainforest inundated year round, making road construction and maintenance difficult (Yamba 2009). The second pilot site is located in Bokumu Mokola village of Gemena territory northwest of the old Équateur province, which is now the Sud-Ubangi province. Here the dominant vegetation is dense, humid equatorial lowland rainforest that transits into evergreen savannah woodland and grasses in the north. The populations of both pilot sites rely heavily on the forest for their livelihoods via slash and burn shifting cultivation, extracting non-timber forest products (NTFPs), fishing, hunting and the production of charcoal.
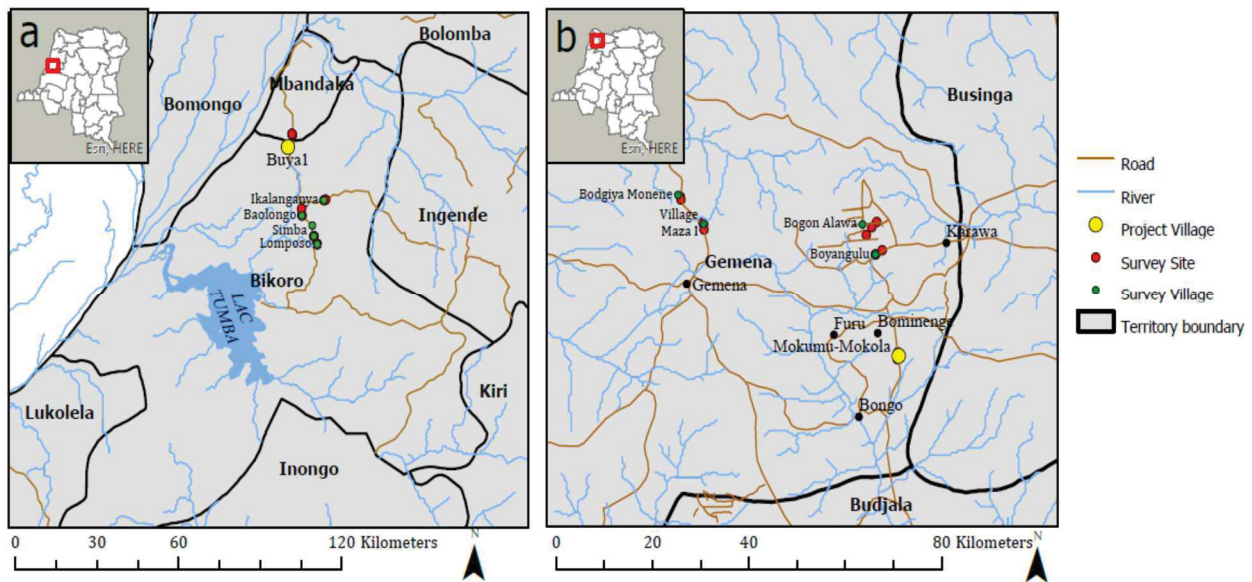

Figure 2. Map of the two pilots in Équateur province: a) Bikoro territory, Buya 1 project village, b) Gemena territory, Bokumu-Mokola project village

Source: Chapman (2016)

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Table 1 offers an overview of the statutory and customary authority structures. All villages belong to the particular politico-administrative district unit, which in turn belongs to a territory and thence a province. These politico-administrative units are established by statutory law and reinforced in the 2006 decentralization reform. This reform demands the establishment of elected local government structures at these different politico-administrative levels. To date, this has occurred only at the provincial level, with the other units still lacking local government structures. Each of these politico-administrative units, from the village to the territory, are thus still governed by a representative with executive powers to implement and enforce state laws and resolve local conflicts. On the other hand, people in the study area also belong to traditional jurisdictions known as tribal chiefdoms, in French as *groupements*. These traditional jurisdictions include the villages and clans and are governed by tribal chiefs. The main function of the customary authorities is to exercise control and manage forestland allocation based on customary rules. The relationship between tribal chiefdom as a customary institution and statutory forestland tenure is analyzed in the next section.

Table 1: Characterization of the study area

Characteristics	Bikoro pilot site	Gemena pilot site
State authorities	Territorial administrator, district administrator, village administrative chief government agencies, tribal chief	Territorial administrator, district administrator, village administrative chief government agencies, tribal chief
Traditional authorities	Tribal chief, customary chief, notables, and customary landowners	Tribal chief, customary chief, notables, and customary landowners
Dominant ethnic groups	Mongo, Ntumba, Ekonda, Pygmies 20%	Ngakwa
Grass root associations	Peasant development organizations (OPDs)	Religious groups
Intervening agencies	World Food Program(WFP), Food Agricultural Organization (FAO), Oxfam, Bureau Diocésain du Développement (BDD), World Agroforestry Centre (ICRAF)	Humana People to People Congo (HPP), Communauté Evangélique de l'Ubangi, Mongala, Gemena (CEUM)
Forest use	Agriculture, logging, charcoal production, NTFPs. Presence of logging concessions	Agriculture, logging, charcoal production, NTFPs. Presence of agricultural concessions
Forest type	Dense humid equatorial rainforest accommodating large portion of swamp forests inundated all year round.	Dense humid lowland rainforest accommodating evergreen savannah woodland and grasses.

The paper combines data from policy documents, interviews, focus group discussions and field observations from field research conducted from May–July 2013, July–August 2014, and July–August 2015. National and provincial policy documents and administrative texts were examined and seventy-two in-depth interviews were conducted in French and Lingala with six different types of actors: customary authorities, local administrative authorities, staff of the different intervening agency, executive members of village associations, staff of the REDD+ pilot project, and logging operators. Our intention was to gather information on the different institutions that influence forest practices and how actors adapt to these institutions in legitimatizing their rights and access to forests.

To capture local actors' insights on how these institutions shape forest practice, and how they respond to them in legitimatizing their practices, we organized nine focus group discussions with ten members in each group. Five groups in the project village in Bikoro (Buya 1) consisting of men, women, customary landowners, migrants, and Pygmies, and another four groups in the project village in Gemena (Bokumu Mokola) consisting of men, women, customary landowners, and migrants were convened. The focus groups considered issues related to local people's rights to resources and benefits and their interactions with local authorities when making decisions about forest rights and conflict resolutions. Field observations were collected on the availability and quality of social infrastructures like roads, schools, healthcare and community activities, rights to land, material resources, places for village meetings, and the way local people engage in these meetings.

4. Forest tenure systems at play in Equateur province

Here, we examine the nature and dynamics of customary and statutory tenure systems in the Équateur province.

4.1. The nature and dynamics of customary tenure to forests

Customary forest tenure is traditionally grouped under a tribal chiefdom (in French: *groupement)* governed by a tribal chief (in French: *chef de groupement*). This tribal chief is the highest customary authority in the study area. Each tribal chiefdom is made up of many villages, with the tribal chief as custodian to all forestlands in the chiefdom and holding authority over the people and the spirits. Their main duties are to protect the people and the land, and to bring fertility to soil and rivers. Their succession is rotational among the dominant clans of the chiefdoms. Each village

that belongs to the tribal chiefdom is governed by a customary village chief who operates at the village level. Each village is made up of more than one clan[2] and the village customary chief is selected from the lineage of the clan that established the first rights on the village forestland. Their succession is based on inheritance among members of the lineage. Each of the clans are headed by a notable, with succession based on inheritance among members of their lineage. The members of the clans are consider customary landowners (in French: *ayant droits*). These different levels are based on their current geographical location, since some clans now extend to other villages within or beyond the tribal chiefdoms.

The customary system of forest management at the village level follows a decentralised model where clans of the village constitute the operational units for production and control of the forest and customary authorities play a role in supervision and management of disputes. Each tribal chiefdom has a traditional council headed by the tribal chief with the village customary chiefs of that chiefdom as representatives. Similarly, each village has a traditional council headed by a village customary chief with the notables as representatives. The latter makes decisions about village land allocations and enforces property rights over the village forests, while the chiefdom's council makes decisions around land allocation within its domain. The legitimacy of the customary authority resides in a cultural belief system transferred from generation to generation. There are also traditional mechanisms of sanctioning these authorities if they misbehave.

Rights holders are classified into three categories: collective (customary authorities), clans (group of families), and individuals. User rights belong to members of clans. This group of right holders claim (exclusive) use rights to all forest resources in the territory of the village, which is designated by natural features (trees, rivers or streams) without exact boundaries. Tradition considers customary landowners as descendants of the male founder of the clan. The male founder of the clan established the territorial rights of first occupation through migration and the establishment of a lineage.

Customary landowners perceive the forests as a common physical and cultural inheritance from the ancestors through genealogical rights. These user rights are passed from generation to generation through the genealogical line of the male descendants of the founder of the clan (see Diaw 2005). Non-clan members living in the village may be granted user rights to forest resources

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[2] A clan is a group of families that share actual or perceived kinship and decent. In Equateur province and other provinces in the DRC, clans are very important traditional forest management groups.

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upon request. Non-clan and non-village members living outside the village, i.e., complete outsiders, may negotiate access and use rights with the customary chief and notables to harvest high-value forest resources such as poles/sticks, timber, and charcoal. Converting forestland into farmland is a decision among the clans that make up the village. Each member family of the clans receives land for farming. Non-clan members negotiate use rights to farmland with customary landowners either by renting a parcel of land, sharecropping, or other forms of social exchange.

Control rights belong to the customary chief, notables, and clan members. The village customary chief manages and controls access to the villages´ communal land and makes decisions about its allocation for other uses. The notables manage and control access to the clans' forestland and allocate land to family members of the clans for different uses and also revolve internal land conflicts within or between families. Once land is allocated to families of a clan, each family establishes productive rights through labor investment. In the Congo Basin, clearing the forest for cultivation or making any labor investment to manage forest resources for productive purposes is the most robust and long-term form of appropriation associated with exclusive permanent user rights, also known as usufruct rights (see Diaw 2005; Graziani et al. 2005). Families having control rights to forestland may exclude non-family members to use the land for cultivation. However, clan members can still access and use resources over which the families have not established permanent use rights, e.g., harvesting firewood, gathering non-timber forest products and medicinal plants, and hunting.

According to customary law, it is forbidden for clan members to sell forestland as it is considered the collective property of the clan. Customary landowners are allowed to leasehold, rent, or sharecrop forestland for which they have established control rights. The user rights, control rights, and alienation rights are transferred from generation to generation through the male genealogical line. The enforcement of customary rules of access and use are based on local norms, routines, and practices. These unwritten rules are multiple, overlapping, flexible, and subject to negotiation and renegotiation depending on factors such as the persons involved, the place, even the season.

Today, with the increased presence of state agents and local administrative authorities, the authority of the customary chiefs and notables has weakened. This is especially the case in Bikoro. Interviews and focus groups revealed that the enforcement of customary rules to forestland that are not supported by local government representatives is limited. Many wealthy, well-situated, and

knowledgeable – i.e., powerful – village members now use local state agents and authorities to establish access to forestland once governed by customary tenure. They prefer to report conflicts over land held under customary tenure to local state authorities, like the district chief or a state agency like the police, rather than reporting them to the customary chiefs and notables. In doing so, they undermine the authority of the customary leaders.

During the focus group discussion in Buya1, a village member noted, *'if you report conflicts over land to the customary chief, the solution is based on our culture and the accused is not well sanctioned'* (interview, village member in Buya1 village, 2014). Many people in the focus group discussions supported this statement. The presence of local state authorities encourages resourceful village members to circumvent customary authorities by establishing social relations with local state authorities (see Samndong 2015).

In the Gemena pilot, customary tenure to forestland is still strong and the power of customary authorities over forestland is uncontested. The region is characterized by ethnic homogeneity and local people tend to reject state institutions because they do not relate to their cultural beliefs, norms, and routine ways of doing things. The presence of state authorities is also limited due to poor roads and limited extractive activities.

4.2. The nature and dynamics of statutory tenure to forests

Statutory forest tenure is established in the 2002 Forest Code, which states that all forests are owned by the state (Art. 7, GDRC 2002). Article 10 of the Forest Code classifies the forests in three broad categories: classified forests, protected forests, and permanent production forests. The classified forests are designated for environmental protection and may include nature reserves, forests located in national parks, botanical and zoological gardens, wildlife reserves and hunting areas, biosphere reserves, recreational forests, arboretums, urban forests, and protected areas. In protected forests, user rights are less restricted compared to classified forests. The Forest Code also recognized customary forest tenure in the protected forests, which is again recognized and reinforced by the 2006 Constitution. Protected forests may also serve as community forests, since they can be granted to communities upon request. In contrast, permanent production forests are designated for the allocation of logging concessions and forests already used for timber production, identified via a public survey process (Art. 23, GDRC 2002).

The 2002 Forest Code recognizes the right of communities with customary claims to the forests to access and use the forests for their subsistence. It also allows communities with

customary rights to extract timber from protected forest through artisanal logging permits (Art. 111-112, GDRC 2002). Communities may apply for such permits for a maximum of fifty hectares on their own or through a private artisanal logger following an agreement between the community and the logger (Arrete 035, MECNT 2006). Individuals of Congolese nationality can apply for artisanal logging permits to harvest timber from the protected forest for a maximum of fifty hectares using long saw or a chainsaw (Global-Witness 2012; MECNT 2006).

The Forest Code and its administrative texts also grant long-term logging rights (control rights) to concessionaires to exploit timber from production forests. The logging rights to concessionaires are granted for a period of twenty-five years through a bidding process that allows both Congolese and non-Congolese nationals to participate (Art. 83,85-86, GDRC 2002). These logging rights mandate the concessionaires to establish a management plan and to consult communities with customary rights to forests that overlap their concessions to negotiate and sign an agreement for socioeconomic development (Art. 89, GDRC 2002). The concessionaire must identify these communities and their legitimate authorities through a legally required socioeconomic survey. The Forest Code further recognizes community use rights within logging concessions for subsistence; but restricts commercial activities and any use deemed incompatible with logging activities (Art. 44, GDRC 2002).

The Forest Code also allocates control rights to communities through its provision for community forest concessions in protected forests (Art. 22, GDRC 2002). The law for the implementation of community forests was enacted in August 2014. This law advances provisions for communities to have concessions of up to 50,000 ha, but the guideline and procedures are under process. The Forest Code also grants communities the right to negotiate and manage the benefits from a social agreement signed with concessionaires operating in production forests (Art. 89, GDRC 2002). An administrative text further provides a model for these agreements by defining what should be negotiated between the parties and, to a certain extent, how the negotiations should be carried out (Arrete 028, MECNT 2008). However, this administrative text fails to provide guidelines for negotiating the social agreement between logging companies and communities. Hence, logging compensations were typically granted on a voluntary basis to the customary authorities while excluding the majority of community members (Seyler et al. 2010). To ensure equity in benefit sharing, a ministerial text known as *Arrêté 023* was adopted in 2010 and provides a new model for the implementation of the social agreement (Arrete 023, MECNT 2010).

The Forest Code grants the Ministry of Environment, Nature Conservation and Tourism (MECNT) the authority to take decisions on forest allocation and management, to issue logging permits to concessionaires, and to approve any forest management plans and the quantity of timber to be harvested. The Forest Code and its implementing regulations, coupled with the decentralization reform, recognized the authority of provincial governors to issue artisanal logging permits in the provinces upon examination of the application and subsequent recommendation made by the provincial and district forest administration. These authorities are mandated to monitor and enforce all the provisions to the Forest Code and its implementing regulations.

In practice, enforcement of the Forest Code and its implementing regulations is very weak for a number of reasons. First, the forest classification is not implemented, and there is inconsistency in the Forest Code. Second, forest law enforcement is massively under-resourced in the DRC. Enforcement officers represent just 1% of the total staff of the MECNT, and most are based in cities, many miles from the logging concessions they are tasked with monitoring. In addition, very few forest officers have any education beyond secondary school, and access to civil service employment is typically based on political patronage (Lawson 2014; Samndong & Nhantumbo 2015). Third, low salaries, which are paid late or irregularly, weakens the motivation of officers and affects the quality of their work. Fourth, bribery and corruption at both the national and local level of the administrative ladder is a significant barrier to forest law enforcement (Benneker 2012; Kodi 2008). Fifth, many local authorities and communities know very little about the details of the Forest Code and especially the new institutional structure created by *Arrêté 023*. Additionally, conflicts between the central and provincial authorities regarding the new division of powers in the management of forest royalties and artisanal operations affects forest law enforcement (see also Benneker 2012; Oyono & Nzuzi 2006; Trefon 2011).

5. Competing tenures and forest practice in Equateur province

Here, we describe how the institutional pluralism describe above plays out for two major forest uses—timber extraction and charcoal production—in the study area. We have chosen these two uses as they demonstrate well how local actors adapt to the overlapping institutional structures in different ways to legitimatize their forest practices or to make claims on forests.

5.1. Timber extraction

Artisanal logging permits are granted only to Congolese nationals to exploit timber in protected forests specifically, as distinct from the categories of production generally or classified forests. Since this classification of the forest estate is not enforced or locally formalized, artisanal logging takes place in uncategorized forests, often including forest concession areas, which thus creates confusion and conflicts between concessionaires, artisanal operators, and communities. In an interview with the district MECNT administrator in Gemena territory, it was revealed that no artisanal logging permits were issued by the governor for 2014–2015. According to him, many of the artisanal loggers in Gemena operated either with authorization letters issued by MECNT officials in Kinshasa or the territorial administrator or without permits.

Information gathered from interviews with five different artisanal loggers operating in the REDD+ pilot site in Gemena revealed that it is difficult to get artisanal logging permits from the governor or MECNT in Kinshasa, as those loggers did not have the needed 'social capital' — whether social status, political connection, social network, and family or ethnic ties, and so on — to do so. Two of the loggers interviewed operated with receipts issued by the district administration of MECNT. These receipts documented that they have paid taxes to the administration to log timber species and, according to them, this is accepted as if it were a logging permit by both customary authorities and local forest officers controlling timber extraction. The other three loggers interviewed operated without permits. They negotiated their logging rights through customary chiefs and the customary landowners and handled the local forest officers and the administration with informal payments. These loggers also noted that many artisanal loggers in Gemena operated without permits. They also established social relations with local politicians and military personnel to improve and maintain their negotiation leverage with the local administration.

Data from interviews and focus group discussions in the pilot sites revealed that all of the artisanal loggers, both with and without permits (tax receipts), had to negotiate their access and use rights to the forest through the customary authority and landowners prior to logging. The negotiation process varied and depended upon the area of forest to be logged and/or the size of the trees species. The loggers negotiated access rights with customary authority by providing gifts, including 300-500USD. If the forest area to be logged had already been allocated to any clan of the village according to customary arrangements, the loggers had to negotiate use rights to the

forest with the members of that clan as well by providing payments and gifts. According to this agreement, the logging is temporal although the time frame is not always explicitly stated. The logger is entitled to the timber species, but the ownership of the forestland remains with the clan.

In the Bikoro REDD+ pilot site, three different types of artisanal loggers were identified. One group had logging permits issued by either the governor of the province or top officials at the MECNT in Kinshasa. This group of loggers was considered powerful because they had the material resources, knowledge, and social networks to obtain such logging permits. A group of less well-situated loggers used tax receipts issued from the provincial and district administration of MECNT to establish rights. Those with the weakest relations operated without permits, but built social relations with customary authorities and negotiated their ways through the administration either with side payments or by using their social capital, i.e., political loyalty, local networks and family ties. At the local level (the village), all loggers negotiated their access to forest with customary authorities and customary landowners. Once the resourceful loggers had negotiated access rights with the customary authorities, they were often reluctant to negotiate their use rights to forests with the customary landowners.

A typical example of this occurred in Penzelle village in 2011, 2012, and 2013, where a powerful artisanal logger operated in the village together with a Chinese partner. The forest area logged was noted as part of a forest concession allocated to a Lebanese logging company (ITB) operating in Bikoro. This artisanal logger operated in the village for more than two years using heavy machinery without making any agreement with the customary landowners. The local people were unable to influence the logging operation because they were informed that the logger had strong connections both to the governor of the province and the mayor of Mbandaka municipality. The supervisors of the logging operation (two Chinese men) refused to be interviewed by us and asked us to contact the governor of the province or the mayor of Mbandaka municipality.

5.2. Charcoal production

The situation of charcoal production differs importantly from logging. Charcoal production has become a lucrative economic activity in the Équateur province due to increased demand from the principal cities including Kinshasa. Charcoal production is considered an activity under the use rights of communities. The Forest Code and its administrative texts make provisions for a circulation permit for producers and transporters of woody forest products including charcoal. The local forestry department is authorized to issue this permit at the area of extraction and requires

inspections at production sites. The local forestry department is also responsible for issuing sale permits to charcoal merchants and collect tax. The 2006 decentralization reform transferred the authority to issue sale permits for fuelwood and charcoal to the Directorate of New and Renewable Energy at the Ministry of Energy. This Directorate is also responsible for collecting taxes from charcoal sold in the markets.

Data from interviews with local MECNT officials at in Mbandaka and Bikoro, as well as local administrative authorities, revealed that charcoal production is largely regulated by customary institutions and authorities despite the Forest Code provision for a circulation permit to producers and transporters. This provision is little known and seldom applied. Charcoal production takes place in shifting cultivation areas of the forest, fallow land, and in primary forests. The producers are mainly customary landowners living in these villages although there are some migrants who engage in this activity as well. According to these officials and the customary authorities alike, charcoal production is not a primary livelihood activity among local people.

Data from interviews and focus groups in the Bikoro pilot nevertheless indicate that many households are engaged in charcoal production. The presence of the Lebanese logging company in Bikoro provides cheap transportation for charcoal to Kinshasa on the boats that transport its timber. Also, the road that links Bikoro and Mbandaka has reduced transportation costs (including for charcoal) to the town. Bikoro has also witnessed an influx of charcoal merchants in recent years. Many of them pre-finance the production process, provide material support to local producers, and hire labor from the Pygmy population.

Apart from the fact that many of the local producers are customary landowners, the migrants or the merchants who finance the process negotiate use rights to forest with the customary authorities and customary landowners by either buying trees or renting parcels of forestland to produce charcoal. Many non-clan members living in these villages use forestland to which they have use rights for cultivation to produce charcoal during forest clearing. Information from focus group discussions in the Buya 1 village revealed that many clan members are now restricting non-clan members' rights to produce charcoal on forestland secured for cultivation because of the increasing value of charcoal in the market. Clan members are now demanding non-clan members who would produce charcoal to negotiate use rights to cut trees standing on forestland secured for cultivation.

In the Gemena pilot, few customary landowners are involved in charcoal production because of poor roads to transport charcoal to the markets and main towns. The few charcoal merchants operating in the area rent parcels of forestland or buy trees from the customary landowners, including the customary authority, while others pay customary landowners to produce charcoal for them. In the Gemena pilot, the customary rules prohibit clan members and non-clan members from cutting trees that bear caterpillars for charcoal production. Caterpillars are a popular protein rich food with high economic and cultural value to the local people. These customary rules are not as strong in Bikoro, since many customary landowners reported the disappearance of trees bearing caterpillars due to logging and charcoal production.

All charcoal merchants are required to have a sale permit but many operate without them. Many sale taxes are imposed on these merchants by government officials at the markets, at road blocks, and at exit locations. Many transporters and merchants, however, do not pay these taxes but negotiate with government officials at road blocks and exit locations with side payments. Data collected from the interviews and field observation revealed five different government officials collecting taxes from the sale of charcoal at markets in Mbandaka and at different exit locations in Bikoro and Mbandaka to Kinshasa. These included officials from the provincial Ministry of Environment, Ministry of Energy, local territorial and district state authorities, and police department authorities. These different authorities imposed different taxes on charcoal transporters and merchants. Similar findings have also been reported in other regions of the DRC (Schure et al. 2015; Trefon et al. 2010).

In Bikoro, officials of the local MECNT coordination unit collected a sales tax for each bag (about 60 kg) of charcoal to be transported to Kinshasa on the boat of a logging company. Many charcoal merchants complained that the tax per bag of charcoal had increased from 200 to 400 Congolese Francs from 2012 to 2014. Many local producers do not pay this sales tax by selling their products to charcoal merchants that come to villages. Local producers who transport charcoal to the markets in Mbandaka, however, pay tax. Many of them also complained about taxes imposed on them at the market by various local officials.

6. Institutional pluralism: what are the implications for REDD+?

The above demonstrates the competing relations between the customary and state authorities in legitimatizing and enforcing forest property rights at the local level, especially around timber

extraction. Given such an institutional landscape, actors engaged in forestry invent different ways of dealing with the plurality of power centers at the local level to ensure claims to forest resources—a phenomenon known as forum shopping (Meinzen-Dick & Pradhan 2002). Their ability to choose which authority structure to legitimatize their forest use depends, however, on the power resources they possess, i.e., material resources, knowledge, and social relations. In such an institutional landscape, there are no effective checks on the powers of the elites relative to the poor and marginalized; actors with more power resources influence those who govern (see Samndong 2015).

How then can REDD+ be implemented in an institutional landscape with competing authority structures? Power and authority are very important regarding access to resources, as they largely determine who can benefit from resources regardless of whether they have tenure rights or not (Ribot & Peluso 2003). Many scholars have pointed out the importance of forest tenure for REDD+ implementation since REDD+ is set up to reward those who maintain or enhance carbon sequestration in the forest (Larson et al. 2013; Resosudarmo et al. 2014; Sunderlin et al. 2014). As REDD+ is a payment-based mechanism, rights holders to forest carbon should be the ones both compensated and held accountable for fulfilling or failing to fulfill their obligations.

Many civil society organizations operating in the DRC believe that REDD+ affords the opportunity to expedite and enhance tenure security of forest-dependent communities through reform (Aquino & Guay 2013; Mpoyi et al. 2013). Others claim that REDD+ interventions might increase state control over forestland while risking the exclusion of some categories of forest users (Fobissie et al. 2014; Phelps et al. 2010). More generally, expediting forest tenure reforms might not guarantee effective and legitimate REDD+ implementation if the authority structures that define and enforce rules are weak and if the process involves top-down, government imposition of tenure security through land titling as a prerequisite for the participation of local communities. Through such a process, poor communities are likely to be excluded (Corbera et al. 2011).

From our findings, implementing REDD+ in a context of institutional pluralism is challenging, since the current situation has different rights holders using different authority structures to legitimatize their claims to resources. Some scholars have proposed applying a unitary and fixed institutional structure, enforced by state authorities, as a means for delivering REDD+ outcomes (Karsenty et al. 2014; Karsenty & Assembé 2015), but this approach might affect the existing bundles of rights to forests, and thus the sustainability, of REDD+ generally (Jagger 2014;

Loft et al. 2015). Such an approach also might fall short in a context where the state lacks the capacity or resources to define and enforce property rights as seen in this study. State authorities can lose people's confidence when a lack of accountability prevails, when government officials represent private rather than public interests (as seen above), and when appropriate institutional and enforcement protocols can be evaded or corrupted by bribery.

Although our demonstration of the multiple and overlapping institutional structures described above provide a more accurate understanding of forest practices and thus a greater flexibility for adapting to changes and uncertainty, the lack of harmonization or coordination between those overlapping institutional structures would likely affect the distribution of REDD+ benefits. Customary rules enforced by customary authorities might deliver reasonable outcomes from REDD+ in traditionally homogeneous communities such as Gemena, but are less likely to succeed in areas where there has been significant in-migration such that founding lineages no longer predominate or have lost some authority (see Fitzpatrick 2005; Meinzen-Dick & Mwangi 2009).

Customary tenure mirrors the cultural and social values of the community, where the forest is regarded not only as an economic or an environmental asset but also as a social, cultural, and ontological resource that embodies the spirit of the society. The legitimacy of customary authorities largely flows from the community, and their accountability as well is based on local norms and customs. In this context, people that share a common background and social history are more likely to trust and respect the customary authorities. Such trust and legitimacy risks decrease if there is perception of corruption and partiality or in situations where customary authorities may not have the knowledge or confidence to deal with pressure from powerful external interests and market penetration. In such circumstances, people may turn to other authority structures (state or international bodies) hoping to get support for their rights claims, even if they fear the loss of autonomy and flexibility that this may entail (Larson et al. 2010; Marfo et al. 2010). In addition, customary tenure often favors the rights and benefits of first occupants, i.e., genealogical and differentiated rights between customary landowners and those considered outsiders. This is more visible when forest resources become more coveted and where the rules of use, exchange and inheritance become more intricate. In the context of REDD+, non-customary landowners and tenants — including vulnerable groups like the Pygmies and women — may be excluded from

REDD+ benefits. This appears to be the case for the distribution of logging compensation in Bikoro territory, as previously documented (Samndong 2015).

Since people in our study areas attach considerable trust to customary tenure for securing their rights to forest resources, the formalization of customary tenure in the DRC using the kind of community-based models seen in Tanzania (see Dokken et al. 2014) offers a promising opportunity for addressing REDD+ implementation tenure issues in the DRC. Similarly, the DRC's enactment of a community forestry law in August 2014 could further ground attempts to formalize customary rights to forestland (Maindo & Kapa 2014). Under this approach, the property rights is perpetually recognized but limited to use and control rights only.

As the modalities and procedures of community forestry in the DRC are under development, early REDD+ pilot projects are applying various mechanisms to recognize customary tenure in their activities (Aquino & Guay 2013; Mpoyi et al. 2013). They are initiated in the process of introducing REDD+ to these communities using procedures of Free Prior and Informed Consent (FPIC). While it is typically assumed that local influence on tenure clarification and rights recognition is assured (Fobissie 2014), in practice, this process is costly and requires time for proper dissemination of information about REDD+ (Sunderlin et al. 2014). In our case study, the REDD+ pilot project organizers have conducted the FPIC process and started demonstration activities in the communities without yet signing contractual agreement with the local population. In addition, information about the risks and costs of the project, as well as issues related to land rights and forest tenure, were not provided or discussed in the FPIC process. When introducing REDD+, many pilot projects conduct land use planning by engaging the local people through a participatory land use mapping exercise that charts customary use rights. This includes developing operational rules for resource use and collective choice institutions for management and exclusion.

Because of a lack of harmonization or coordination between the customary and statutory institutional structures of forest governance in the DRC, in conjunction with an absence of functional local government at the district and village levels, many REDD+ pilot project organizers—including those in our case study—have facilitated the establishment of new village organizations for REDD+ implementation. These are known as a local development committee

(LDC). This new village structure accords with the legal mandate[3] stating that if no local government is in place, a project like REDD+ must establish an LDC. An executive manages this new village organization for REDD+.

While the mechanisms used for creating an LDC and executive committee varies among the REDD+ pilot projects, for our case study, household heads sit as members of the LDC and provided the electorate for electing the executive committee. This excluded women from participation since more than 80% of the household heads in our case study are men – see also Samndong (2014). In the ERA REDD+ project in Mai-Ndombe, all the members of the village general assembly are considered members of the LDC, and members of the executive committee were elected from the village general assembly (Nhantumbo & Samndong 2016). As a mechanism for harmonizing and coordinating this new REDD+ organizational structure with customary institutions in order to build local trust and legitimacy, the president of the LDC in Bikoro is the village customary chief while the president of the LDC in Gemena is one of the customary landowners. This is also the case of the ERA REDD+ project in Mai-Ndombe, where all of the presidents of the LDCs in every village were customary landowners.

While it is still too early to assess the effectiveness of the new village structure for the delivery of REDD+ outcomes, the representativeness and accountability relations of the authority structure in this REDD+ village organization will depend greatly on the social processes and local power dynamics influencing the distribution of REDD+ benefits. This structure is different from the existing structure as it is established through a democratic (if not complete) process while the existing structure is based on local norms and customs. This recognition of the customary chief and customary landowners to head the executive committees of these REDD+ organizations might prompt and empower the customary institutions to be more democratically accountable, thus transforming local norms and customs and minimizing the effects of the current pluralist situation. However, if these authorities are not accountable to the local people, it may simply reinforce elite interests and the exclusion of some segments of the population.

While clarifying property rights to forests might be a pre-condition to enabling benefits from REDD+, the success of these rights are conditional upon the level of ethnic heterogeneity. In the case of Bikoro pilot with a high ethnic heterogeneity, such measure might favor the dominant

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[3] Law No 08/012 of 31 July 2008 elaborating the decentralization reform in Art 3 of the 2006 constitution.

ethnic group and hence additional measure could be needed to secure benefits to other ethnic groups. In situation where these rights are weakly enforced, some people might apply different strategies to access and benefit from REDD+ depending on their relationships with the authority structures and their ability to influence decisions.

7. Conclusion

This paper documents that the forest in the Équateur province is governed by both statuary and customary tenures. The statuary tenure was introduced by colonial and postcolonial authorities to override customary tenure and enforce state control over forestland and thus generated a situation of institutional pluralism. While customary tenure is flexible and subject to negotiation, statuary tenure is based on legislation with less flexibility and room for negotiation. The lack of harmonization and coordination between these two tenure systems has created a situation where the state and customary authorities compete to legitimize forest practice at the local level. This has created room for local actors who move across these institutional landscapes to patronize authorities who favor their particular use of forest resources. In this way, empowered local actors can draw on state authorities to support claims to forests or legitimize their use rights while less empowered local actors instead build relationships with traditional authorities to secure their access and use rights to forests. The situation is exacerbated further by the inconsistency of the statuary tenure and weak enforcement. As such, local state authorities can reshape statuary tenure provisions before they arrive at the local level as a way to favor their personal interests. Although such an institutional landscape provides greater flexibility for adapting to changes and uncertainty, any implementation of REDD+ benefits in such institutional conditions will greatly affect their distribution.

For REDD+ to be effective and legitimate at the local level, there is a need to address tenure insecurity and the basis of conflicts over forest access and use. The competing forest tenure systems in the DRC imply that a 'one size fits all' approach to REDD+ is doomed. While recognizing customary tenure seems a better approach for addressing tenure in REDD+ implementation, such an approach first requires land tenure reform. Early actions towards addressing tenure in REDD+ through the establishment of collective choice institutions and land use planning may seem more demanding than a top-down approach, but the former affords better chances for delivering effective and legitimate REDD+ outcomes at the local level. At the same time, however,

the authority structure(s) that undergird collective choice institutions for defining and enforcing REDD+ rules and benefit distribution locally must also be empowered to be more democratic and accountable in order to avoid elite capture and to ensure legitimate outcomes for REDD+.

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PAPER 4

Article (Revised and resubmitted in Ecology and Society)

Gendered forests: exploring gender dimensions in forest governance and REDD+ in Équateur Province, Democratic Republic of Congo (DRC)

Raymond Achu Samndong[*1] and Darley Jose Kjosavik[1]

[1]Department of International Environment and Development Studies, Norwegian University of Life Sciences (NMBU), Noragric 5003, NMBU, 1432 Ås

ABSTRACT

This study analyses gender relations legitimatized by socio-political institutions of forest governance in REDD+ pilots in Équateur Province of the DRC. Using data from interviews, focus group discussions and field observations, the paper shows that men and women have different knowledge and use of forests, but these differences are not given due consideration in forest governance. Women's voices are often muted in decision-making arenas and they occupy only a nominal position in both forestry and development initiatives as compared to men. This status quo is extended to the REDD+ pilot projects as well. Women have limited information about REDD+ compared to men. The mechanisms used to establish new village organization for REDD+ exclude women from decision-making in the ongoing REDD+ pilot project. The study shows that women's bargaining power for equal inclusion in decision-making processes and for sharing benefits are constrained by existing social norms regarding local access to land and material resources, existing gender division of labor, local perceptions regarding women's roles and contributions/responsibilities, as well as men's dominant position in rural settings. For a gender transformative REDD+, the study suggests that REDD+ actors should attempt to bring about institutional changes that transform gender relations and thereby increase women's bargaining power.

Key words: Gender role; decision-making; forest governance; REDD+, Équateur province

1. INTRODUCTION

The differences between men and women in knowledge, access and use of forests have long been recognized (Ingram et al. 2014; Meinzen-Dick et al. 1997; Mwangi et al. 2011; Rocheleau & Edmunds 1997; Sunderland et al. 2014). This gender disparity is due to the unequal power relations between men and women. These relations of power are constructed and shaped by a host of institutional arrangements that change over space and time (Agarwal 1997; Cornwall 2003; Fraser 1989; Rocheleau et al. 1996). Women's roles and knowledge of forests have been primarily used for subsistence production and nurturing humans and nature. This knowledge is often taken at face value, rather than linking it to socio-cultural settings for better understanding of opportunities and

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[1]* Corresponding author, email address: raymond.samndong@nmbu.no/rayasboy@yahoo.com

interests (Arora-Jonsson 2013). While women's knowledge and use of forests are important for forest conservation and management, their voices have long been devalued in forest management decisions (Agarwal 2001; Mai et al. 2012). Mies and Shiva (1993), have exposed how patriarchal science has historically marginalized women as producers of knowledge.

Given these differences in gender role of forests use and management, gender research in forest governance has primarily focused on the inclusion of women in decision-making committees and organizations (Arora-Jonsson 2014; Colfer et al. 2015; Tyagi & Das 2017). Extensive research has identified several characteristics and determinants of women's participation in forest management, but also exclusionary patterns and the effects on forest management outcomes and poverty of women's presence in committees (Agarwal 2001; Agarwal 2009; Coleman & Mwangi 2013; Mai et al. 2012). These studies point to the fact that the gender composition of forest committees/organizational structures and the sociocultural backgrounds of women significantly affect their attendance at meetings and the probability that they may voice their opinions. Thus, for effective participation it is relevant to consider how power relations operate within decision-making arenas and how they affect the capacity of both women and men to voice their interests.

In a time when new forest conservation initiatives — such as the international mechanism for mitigating climate change by reducing emissions from deforestation and forest degradation, and enhancing carbon storage in forests (REDD+) — are being developed and implemented, there is an urgent need to recognize the unequal power relations between women and men in relation to forest resource use and management. It will enable sustainable use, as well as equitable benefits sharing (Gurung & Setyowati 2012; Peach Brown 2011). This paper therefore assesses women's and men's knowledge and use of forests, their inclusion in forestry and development interventions and the ongoing REDD+ pilot activities in REDD+ pilot sites in Equateur province. The main questions include: (1) How do women and men differ in knowledge, access and use of forests in the pilot sites? (2) How do existing forestry and development interventions and the ongoing REDD+ pilot activities include women and men in decision-making and benefits sharing? and (3) What factors influence women's inclusion in decision-making and benefit sharing in these interventions? We address these questions by assessing two REDD+ pilot projects in Equateur province. Our aim is exploratory, illustrative and comparative. By doing so, we try to identify and highlight issues related to gender roles, inclusion and exclusion in these interventions for greater attention to power inequalities between actors in these interventions and the factors that create these inequalities.

2.   THEORIZING GENDER: AN ANALYTICAL FRAMEWORK

Gender is understood as the socially constructed ideas and practices of relations of power between women and men that are sanctioned by cultural, political and economic institutions (Agarwal 1997; Elmhirst 2011; Pandolfelli et al. 2007; Rocheleau 1995). These ideas and practices are manifested through division of labor and resources; and ideologies and representations; and are affected by status, class, and ethnicity, which ascribe to men and women different roles, abilities, preferences and positions in the social hierarchy (Bandiaky 2008; Pandolfelli et al. 2007). Following this

definition, a gender analysis requires an understanding of context specific and intersecting circumstances. That is, gender is mediated by other factors such as wealth, age, status, class and ethnicity, and sexual orientation (McDougall 2001; Pierce Colfer et al. 2013). Within forest communities, these factors are significant in assessing gender roles in forests, food security, conservation and inclusion in decision-making institutional structures (Colfer 2013). In this regard, gender is considered a critical variable for analyzing and influencing access, use and management of forests.

Gender analysis is crucial since women and men have different experiences, needs, interests, strengths, opportunities, limitations, privileges and biases. These aspects must be reflected in the way communities are approached and explored. In addition, gender has practical and policy-oriented implications since men and women are not homogenous groups. This demands policies that are socially integrated and inclusive and that target them differently in achieving meaningful change (Mai et al., 2011). This is important, as many national and international legislations, treaties and regulations including REDD+ policies have advocated for gender mainstreaming in environment and development interventions (Gurung & Setyowati 2012; Nhantumbo & Chiwona-Karltun 2012; Quesada-Aguilar & Aguilar 2009). Furthermore, gender provides a practical and methodological approach to analyzing opportunities and forms of marginalization by providing a conceptual framework to examine roles, relations and power patterns. In that sense, gender is a key analytical and explanatory variable in the way we manage forests and resources in general that can help us understand participation and measure forest governance outcomes (Colfer 2013).

In this paper, our analysis of gendered inclusion in forestry intervention and REDD+ is centered on the action resources of men and women, how these determine women's control and relations in forest use and management (Pandolfelli et al. 2007; Weinberger 2001). Action resources are the form of power resources — wealth, knowledge, information, and social relations — actors (men and women) use in a given context to increase their relationships in forest use and management. These action resources are sanctioned by the institutional arrangements (rules, norms, regulations) that determine how the actions unfold on the ground (Pandolfelli et al. 2007; Weinberger 2001). The institutional arrangements either constrain or constitute the bargaining process (Agarwal 1997).

Taking into consideration the action resources of both men and women and the institutional arrangements that shape these resources, the typology of participation articulated by Agarwal (2001) is employed to characterize men's and women's involvement in decision-making arenas of these interventions. This typology, compared to other typologies[2] of participation, assesses men's and women's inclusiveness in these interventions (Table 1). Participation in interventions ranges from nominal participation (membership in a group or physical presence) to interactive participation in which a member (man or woman) has a voice and influence in the group's decisions. Agarwal (2010: 99) further argues that many interventions focus on the numerical strength of women, rather than their bargaining power to participate better in the very process of decision-making.

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[2] There have been several typologies of participation (Pretty 1995)

Table 1: Typology of Participation

Form/level of participation	Characteristic features
Nominal participation	Membership in the group
Passive participation	Being informed of decisions *ex post facto;* or attending meetings and listening in on decision-making, without speaking up
Consultative participation	Being asked for an opinion in specific matters without guarantee of influencing decisions
Activity-specific participation	Being asked to (or volunteering to) undertake specific tasks
Active participation	Expressing opinions, whether or not solicited, or taking initiatives of other sorts
Interactive (empowering) participation	Having a voice and influence in the group's decisions

Source: Agarwal (2001)

We further employ Agarwal (2001) insights to discuss the factors that affect women's participation in these interventions as compared to men's. Following this theoretical insight, women's participation in forestry and development interventions is determined by six factors: rules of entry, social norms, social perceptions, entrenched territorial claims, personal endowments and attributes, and household endowments and attributes. This framework allows us to focus on the dynamics of power and to analyze how barriers to women's participation in these interventions are constructed by the underlying power relations between women and men (Agarwal 2001; Rocheleau et al. 1996).

3.   STUDY AREA AND RESEARCH METHODS

As indicated, the data for this paper was collected from two REDD+ pilot projects located in the Équateur province of the DRC (Figure 2). Équateur province was divided into five new provinces in July 2015, following the national decentralization reform, but our analysis is based on the province's political and governance structure before the division. The first pilot site is located in the Buya 1 village of Bikoro territory southwest of the old Équateur province, which is now the new Équateur province. Its dominant vegetation is equatorial swamp rainforest inundated year round, making road construction and maintenance difficult (Yamba 2009). The second pilot site is located in Bokumu-Mokola village of Gemena territory northwest of the old Équateur province, which is now the Sud-Ubangi province. Here the dominant vegetation is dense, humid, equatorial lowland rainforest that transits into evergreen savannah woodland and grasses in the north. The people of both pilot sites rely heavily on the forest for their livelihoods, practicing slash and burn shifting cultivation, extracting non-timber forest products, fishing, hunting and producing charcoal.

Woods Hole Research Centre (WHRC) manages the REDD+ pilot project in partnership with the Ministry of Environment and Sustainable Development (MECNT) with support from the Congo Basin Forest Fund (CBFF). The pilot project was initiated in 2011 with the aims to (1) increase the capacity of regional actors in the development of REDD+ strategies and preparation

for the management of carbon funds, and (2) design and implement community-based REDD+ pilot projects with potential for continued carbon financing.
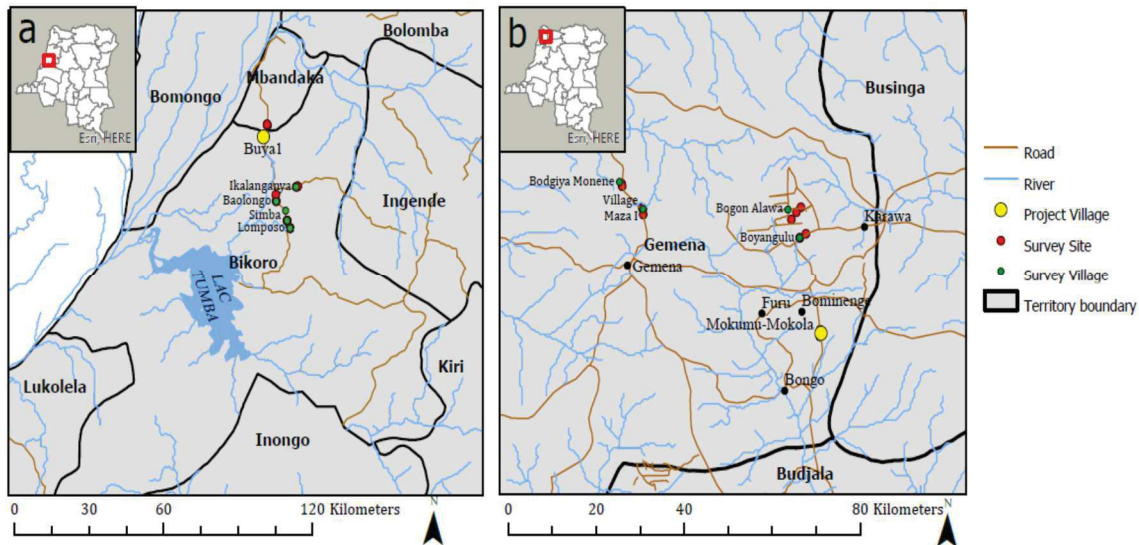
Figure 2. Map of the two pilots in Équateur province: a) Bikoro territory, Buya1 project village, b) Gemena territory, Bokumu-Mokola project village *Source: (Chapman 2016)*

Ethnically, the pilot sites consist of two main ethnic groups: the Bantu and the Batwa.[3] The Batwa are found in the Bikoro pilot site and make up about 20 per cent of the population in the territory. They are considered migrants by their Bantu neighbors in the study area, and hence have limited rights to land and forest. The Bantu group is divided into different tribal groups (the Mongo, Ntomba, and Ekonda including other migrant groups and Ngbaka in Gemena).

The two pilot sites are different in terms of their landscapes, economic activities, accessibility and external interventions. The Bikoro pilot site has experienced several interventions related to agricultural development, forest governance and conservation from different international and national non-governmental organizations (NGOs). The Gemena pilot site, for political reasons,[4] has experienced very little of these interventions. In Bikoro we focused on the food security project implemented by Bureau Diocésaine de Développement (BDD), the World Food Program (WFP), the Food and Agricultural Organization (FAO), Oxfam and the ongoing REDD+ pilot project. In Gemena, we focused on the agricultural training project implemented by the Humana People to People Congo (HPP-Congo) and the ongoing REDD+ pilot project.

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[3] The Batwa is an ethnic group more commonly referred to as "Pygmy" in the region. They are also referred to as *Peuples Autochtones* (PA) in French, which means indigenous people.
[4] This region was a stronghold of former president Mobutu during the war of 1996–2002. After the war, the region became the stronghold of the main opposition party Mouvement de Liberation de Congo (MLC) of Jean Pierre Bemba under the Kabila administration limiting presidential supports and political priority.

The field research was conducted in May–July 2013, July-August 2014 and July–August 2015. Information was obtained through interviews, focus groups discussion and field observation. We interviewed 72 people from six categories of actors (Table 2) using snowball and purposive sampling. Our intention was to gather information on men's and women's knowledge, access and use of forests, their inclusion in decision-making arenas and the factors that constrain women's inclusion.

Table 2. Category of actors interviewed in both pilots

Category	Bikoro pilot		Gemena pilot		Total
	Male	Female	Male	Female	
Customary authorities	3	2	4	2	11
Local administrative authorities	3	0	2	0	5
NGO staff	5	2	4	1	12
Executive members of village associations	8	6	4	6	24
REDD+ pilot staff	4	0	0	0	4
Representatives of the REDD+ village organizations	8	0	7	1	16
Total					72

We organized nine focus group discussions (FGDs) in total in both pilots with 10 participants in each group to capture the local people's insights of these issues. Five FGDs were organized in Buya 1 village with men, women, customary landowners (ayant droit), migrants and Batwa groups; and four FDGs organized in Bokumu Mokola with men, women, customary landowners (ayant droit) and the migrants.

In addition, field observations were made concerning the availability and quality of infrastructure such as roads, schools, health care and community activities, rights to land, information and material resources, village meeting place and the local peoples' mode of engagement in meetings.

4.   RESULTS

4.1.   Cannot see the forest for the trees? Exploring differential knowledge, access and use of forests

Information gathered from the interviews and focus group discussions revealed that both men and women in the project sites have different knowledge of the forest. The women in both pilots view their forest as a place with fertile soil for farming and with many non-timber forest products (NTFPs) for consumption and cash income, and as a place to collect firewood for the household. Women attach more importance to the collection of NTFPs that make a significant contribution to household consumption and cash income. The view of the forest from Batwa women in Buya 1 village was not dissimilar to the Bantu women. They mentioned in the focus group that the forest is a place to collect NTFPs and for cultivation. For the men, the forest is a place with big trees to

harvest timber, a place with sticks/poles and material for construction, a place with trees to produce charcoal, a place with many wild animals for bush meat and a place full of different NTFPs and medicinal plants for subsistence use and cash income. The men in Bikoro pilot heavily referred to the forest as a place for charcoal production, while the men in the Gemena pilot heavily cited the forest as a place of many food trees[5] and medicinal plants. This difference in views is because charcoal has become an important economic activity in Bikoro, with increased demands from the big towns and being easily accessible, compared to Gemena. The men in Gemena attached high value to the caterpillars' food tree, because of its high economic value in the area. In both pilots, the men of the customary landowners' focus group mentioned that the forest is a place inhabited by the spirits of ancestors, with strong cultural importance. The Batwa men had a quite different view of the forest compared to the Bantu men. In their focus group, they indicated that the forest is a place to hunt wild animals, fish, harvest forest products and medicinal plants.

The main reason for this difference in knowledge of the forest between the men and women was that the men are mobile compared to women, hence, they know more about the forests, its boundaries and the location of different forest resources compared to the women. The women's role is to nourish and cater for their households, while the men perform the outdoors activities. This women's role of caretaking has limited their knowledge about the harvesting and processing of products that aims to improve household food security and, in fewer cases, their cash income, while the men's role is concentrated on high-value forest resources for market exchange. Women's knowledge of forests — although limited to NTFPs — is important for the household to cope with shocks such as drought, food shortages and low income.

The information gathered from the interviews and focus group discussions revealed that the difference in knowledge of the forest between the men and women is related to how they access and use the forests. The women in both pilots have limited access to and control over the forest. Their rights to forests are meditated by menfolk (father, husband or son) and enshrined in the customary tenure of forestland. In term of forest uses, amount of extraction for forest products and the conversion of forestland into agricultural land is the principal livelihood activity in both pilots. Information gathered from the interviews and focus groups indicated that both men and women differ in the ways they engage in farming, their crops and tasks. The opening up of the forest for the establishment of the farmland requires sheer physical strength and is principally the men's task. The men do very little work once the clearing is done, and the rest of the work in the field (planting, weeding, harvesting) is women's responsibility. Gender differences were observed in the types of crops cultivated in the farm fields. Men focus on the cultivation of food crops with high market value such as plantains and palm trees, while women's main concern is subsistence food crops. Information from the interviews and focus group discussions also revealed that men are now increasingly involved in the production of groundnut and maize because of their high market value. In addition, the men in Gemena pilot are now increasingly involved in the harvesting of caterpillars, especially the young adult men due to the relative scarcity and high demand in the markets. The women in Gemena pilot reported in their focus group that the young men now trek

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[5] Food trees are tree species that provides food such as fruits, caterpillars, mushrooms etc.

long distances into the forest for days to harvest caterpillars, while their domestic responsibilities do not permit them to do so.

4.2. Forestry and development interventions: two tales on the nature and process of participation

4.2.1. *Muted voices in local forest management institutions*

The customary system of forest management is practiced in both pilots. According to this customary system, each village in the pilots has a traditional council headed by village customary chief with the notables (the head of the main clans in the village) and some elderly members of the village as representatives. This council makes decisions about village land allocations and enforce property rights over the village forests. In Bikoro and Gemena pilots, the village traditional councils are made up of seven and eight members respectively, and in each case there are only two women. The customary landowners nominate these female members based on age and virtue. Although women are represented in the village traditional council, they are not included in decisions related to land allocation and forest management. When there is a conflict related to land allocation and management in the village, only the men with customary claim to land (*ayant droit*), the notables, customary chiefs and tribal chief are invited to mediate. Hence, the decision made would not reflect women's views. A woman who is a member of the village traditional council in Mokumu-Mokola in an interview noted: *"we do not have power to influence decisions in the council. Our presence is to give advice on issues related to women's access and use of forests when there is a conflict"* (Interviewed August 2015). The local norms and customs allow women to inherit farmland from their father. In practice, however, early and forced marriage makes this difficult. Moreover, women are expected to gain access to land via their husbands. Single women's rights to inherit from their father are often contested by their male siblings. This was reported in the women's focus groups in both pilots. Moreover, women have very limited access to and control over forest resources. Women do not control access to forestland but maintain their access through relationships of patronage, marital status or family support from husbands, fathers, uncles or sons. Women are involved in forest related decisions only at the household level such as where and when to cultivate, what crops to plant in the different fields, organization of household and farm activities.

Apart from decisions related to land allocation and management, the customary chief is the main intermediary for the negotiations of the social agreement and logging compensation with the logging companies in the Bikoro pilot villages. This is based on the 2002 Forest Code (article 44 and 89), the 2006 Constitution (article 34 and 56) and Arrêté 023 issued by the Ministry of Environment on 7th June 2010 (GDRC 2002). Inclusion and benefits from these negotiations are based on ethnicity and customary rights to forestland. Only the customary landowners, who are mostly men, are involved in the negotiation and they are paid the logging compensation. Women are not included in the negotiations since they do not control access to forestland. Married women may benefit from logging compensation via their husbands. There is no logging concession in

Gemena pilot, but artisanal operators negotiate their access and rights to log the forest with the customary chiefs and notables. Women are not involved in this process.

4.2.2. *Under-representation of women: the food security project of Buya1 village in Bikoro pilot*

Village level associations known as Organization Paysanne de Development (*Peasants' Development Organizations*), referred to as OPDs were recognized to implement the project activities in the village. These village associations have legal status and operate as a platform through which intervening agencies train villagers, supply materials and inputs to improve agricultural production and engage in other development activities (Samndong 2015). Among the 21 OPDs that exist in Buya 1 village, only four were chosen for the food security project. Among these was one women's association (Table 3). Membership of these OPDs is open to everyone living in the village and is based on a fee equivalent to 1-2USD and a monthly contribution equivalent to 0.5-1USD. Very few women are members of these OPDs (Table 3) and very few women participate in the meetings and activities of the associations.

Table 3: Gendered membership in village associations recognized in the food security project of Buya 1 village

Village associations	Number of Men	Number of Women	Total
Regroupement de Cultivateurs de Buya 1 (RCB)	18	7	25
Action pour le Développement Communautaire (ADC)	18	7	25
Centre Agropastorale de Buya 1 (CAPB1)	10	5	15
Association des Femmes Paysannes de Buya 1 (AFPA)	0	25	25

In the Focus groups, women complained that their domestic responsibilities and farm activities hinder their participation in the meetings and activities of the associations. This is because the time set for these meetings often conflict with their activities and most men are unwilling to cover for their wives in household chores given the prevailing gendered social norms. Women pointed out that meetings mostly take place during the day when most women are out in their farm fields or forests. Some meeting dates and locations are often announced in the village, but the information does not reach all village members especially women. This gives men the advantage to have the first contact with the intervening agencies, access to information and networks. Some women reported that their husbands do not allow them to join the associations. *"Our husbands think the associations make us disobey them and challenge their authority"*, said a young woman in Buya 1 village, a statement that was confirmed by many. The Batwa women specifically mentioned that they could not afford the membership fees and other mandatory contributions. The discussions further revealed that the active members of the women's associations are women who have experienced some forms of outside exposure, training and education.

The executive members of these OPDs are elected from the general members with four years renewable term of office. To be an executive member of the OPD, one is required to be able to read and write in French, speak well in public, have some physical assets (valuable properties such as house, land, livestock), educated above secondary school level, command respect in the village, and able to protect the interest of the village. Very few women (30.6%) have completed primary education in both pilots (Samndong 2014). This limits their ability to become executive members of the OPDs. In RCB, ADC and CAPB1 there is only one woman in each association as executive member. Women hold only the office of the treasurer and they have been replaced twice in the RCB and ADC. The executive offices held by men have never been replaced since the creation of these OPDs. During an interview, the president of RCB in Buya 1 noted that participation in meetings was very important for one's voice to be heard in decision-making matters. Other members confirmed this statement during the focus group discussion. An Oxfam interviewee in contrast reported that women's inclusion in the executive committee of these OPDs is often imposed by the intervening agencies, though culturally it is not accepted that women be engaged in public meetings. Even when included, their voices are often ignored. The executive committees of the OPDs are the decision-making bodies. The committee members received training, information, resources to organize meetings and activities in the village and farm tools to be distributed to members. Women are under-represented in the executive committee hence are excluded from these training and information.

Although women are under-represented in these committees and excluded in the training activities, they still acknowledge that their knowledge of forest in relevant for the food security project. This was clearly articulated by the president of the women's association (AFPAB) who noted that "*we know the food crops to grow in our forest. We know where to grow what food crops and the soils that produce much, which insect or diseases affect our crops, but very few women participate in the different workshops organized by FAO,WFP, Oxfam and BDD in our village and very few women received support. The men dominate these workshops, but they don't use the forest the way we use and do not share this information the way it was given*". Women are invited to these project meetings just to sit—nominal participation (physical presence) since their voices are not included in the final decisions. Many women do not participate in the training workshops and hence lack information. No woman participated in the rice cultivation demonstration activity organized by WFP/FOA in Buya 1 and only men own rice field because it is cultivated in the swamp forest that require heavy physical work and perceived as a man's job.

Several men mentioned that the local norms prohibit women to participate in public decision-making in the presence of men. The men of the focus groups in Buya 1 village noted that *"in our culture, once a woman's bride price is paid and marriage rites have been performed by her husband, that woman becomes the responsibility of her husband and subordinate to his decisions or instructions. She may make suggestions or contribute by supporting a viewpoint, but cannot make decisions"*. Some women, especially married women mentioned that they need the approval of their husbands to become members of the OPDs and to attend the meetings. Most men often refuse to allow their wives to forego domestic chores for the sake of project activities and

meetings. However, some men in the focus groups indicated that they attempt to support their wives in domestic duties, but their fellow men and even some women often stigmatize them. This hinders their effort in supporting their wives.

Our field observations revealed that women in the project sites, especially married women were submissive in their behavior. The married women noted that it is disrespectful and culturally unacceptable for a married woman to speak boldly in front of men in public. In addition, the women in the focus group in Bukumu - Mokola noted: "Although our culture demands of us to be loyal to our husbands, our Christian doctrine teaches us to be submissive, respectful and obedient to our husbands".

However, the women of the focus group in Buya 1 village confirmed that, some married and single women in the village are courageous to speak in public even during village assembly meetings in the presence of men. These women have some forms of outside exposure, training and education. Some men noted that despite the cultural norms, some single women and widows in Buya 1 often speak boldly and even insult men openly. Some of these women, have been stigmatized as *"iron women or men in women's form"* in the village.

Women benefit very little from the food security project compared to men because of their limited participation given that they are nominal participants. For example, the women received little information and training from the project. The farm tools that are provided by the project are distributed to only the members who have paid their membership fees, and contributions, and are active in the meetings. The president of RCB, in an interview noted: *"if my association receives materials from our partners, we distribute these materials to all registered members of the association, but if we have field activity only those who participate in the field activity benefit"* (interviewed in July 2015). Several women noted that they participate in these meetings just to benefit from the per diems that are distributed to participants. Since women are good in mobilizing labor especially women from the women's association Mama Lamuka, they are often hired in the activities.

Although women's participation in the food security project in Bikoro seemed to be passive, they were still able to use different mechanisms to exercise their agency and resist male authority (Table 4). Information from the interviews and focus group discussions revealed that both men and women used different accountability mechanisms to hold the OPD executives accountable. Apart from elections, which both men and women confirmed to use to remove or endorse the executive members and which is inscribed in the OPD regulations, the other mechanisms were not decisive but created impact on the social status and prestige of these members.

Table 4: Gendered forms of accountability mechanisms used in Buya I village

Available accountability mechanisms	Used by men	Used by women
Elections	+++++	+++++
Public confrontation	++++	+
Report to higher authority	++++	+
Threatening violence	+++	+
Boycott village meetings and activities	++++	+++
Sabotage activities	++++	++
Shame leaders	+++	++
Make up stories	++	++++
Spread rumors	+	++++

The codes represent the use and strength: + not used, ++low use, +++ constant use, ++++ high use, +++++ heavy use

4.2.3. *The agricultural training project in Mokumu-Bokola village, Gemena pilot: high participation of women*

In order to implement the agricultural training project, HPP-Congo created three-village associations known as Molende 1, Molende 2, Laka in September 2014. Although membership in these associations is open to everybody in the village, only 25 individuals have registered in each of the associations. In Molende 1, Molende 2 and Laka; there are 15, 13, and 15 women respectively. There is no membership fees, however, each registered member is requires to contribute 2USD for the legalization of the association documents. Each of these associations has five members in their executive committee including a woman as treasurer. The village traditional council appoints the president and the president then appoints the committee members through consultation with the members. The general assembly of the associations makes the decisions while the committee executes the decisions and report to the assembly. More than 50% of the members of these associations are women. Information gathered from the interviews and focus group discussions revealed that men did not have much interest in joining these associations as about 80 per cent of the farming activities in the village are performed by women. It was further revealed that during the consultation meetings with the local people, HPP-Congo deliberately encouraged women to join these associations given that they were the ones that do most of the farming activities.

The agricultural training program in Bokumu Mokola village is still ongoing. Information gathered from the interviews and focus group discussions indicated that although women are under-represented in the executive committee of these associations, they are actively involved and engaged in the project meetings and activities. Their under-representation in the executive committee was because they needed members who are able to read, write, and communicate freely with the staff of HPP-Congo. The women, however, pointed out that the general assembly made all the decisions of the associations. The executive committee reports to the general assembly and all the members are informed about the projects and the activities. The women in the focus groups

noted that since decisions are made in the general assembly, they are involved through either voting or negotiation. They also indicated that they are motivated about the project because their interests are considered. Several women mentioned that since the project is related to their activities in the forest, they are encouraged by their husbands to participate in the training and the meetings. However, some women complained that their household chores often constrained them to participate in the meetings and training. A staff of HPP-Congo interviewed reported that they always try to organize meetings and training at a time that is convenient for women. This convenient time is often difficult to find because of other constraints like the weather, the bad roads and the meeting venue of the village. HPP-Congo has established three demonstration plots in the village, where the members are trained on different techniques for cultivating different food crops to produce high yields. All members of the associations participated in the different training activities. Each member receives the training, a machete, two hoes and high yield seedlings. The next phase of the project is for the members to implement the training they have received and test the new seedlings on their farmlands.

4.3. REDD+ pilot project: A man's world

4.3.1. Once bitten twice shy: women's reservations on REDD+

Across both pilots, the awareness of REDD+ was higher among men than women although all confirmed that they have heard about REDD+. Some members of the men focus group in Buya 1 noted that REDD+ project would provide them with local alternative livelihoods such as agroforestry and micro credit scheme. The men in Bokumu-Mokola also reported that REDD+ is a forest conservation project that will provide the village with innovative agricultural practices, agroforestry, social infrastructures to protect the forest. Some men in the focus group emphasized that REDD+ was a payment mechanism to protect forest, but did not understand how this payment would be done.

Not all women in the women's focus groups in both pilots were aware of REDD+. In the women's focus group of Bokumu-Mokola village , the women who claimed to know the project noted that the project was named 'Zamba Malamu' a new project that will reduce poverty in the village, protect the forest by helping them to do their agriculture in fallow land, improve soil fertility in degraded land and provide them with farm inputs. Some women in Buya 1 village also shared these views but also added that the REDD+ project would provide the village with portable drinking water, schools and micro credit scheme.

Gender knowledge of REDD+ was based on information received during the introduction of REDD+ in both pilots - free, prior and informed consent (FPIC) process. During the introduction process, village assembly meeting and workshop were held to inform and create local awareness regarding the project goals, expectations and outcomes. The women who participated in these meeting and workshop were positive about the information they received about their village being selected for the REDD+ project for development. These women however, believe that the REDD+ project is meant to benefit only men since their attendance was more than women and they always receive the information. Information gathered from the focus groups, revealed that many women did not attend the village assembly meetings and workshop in both pilots. Men have more leisure time and are more involved in village affairs than women. The men were the first to receive

information about this meeting since they are often home during the day while the women are either in their farms or behind the house working. The nature of the gender division of labor favors men and gives them access to vital project information, constraining women's access to such information. During the women's focus group discussion in Buya 1, a woman was supported by other women when she stated that *"Our culture makes life easy for the men because they do not prepare food or care for the children. The men work hard in their fields but when they come back home they relax and socialize with their friends. They are concerned with only what their wife gives them to eat, they are not concerned about how she has been working all day to make sure he would get food to eat"* (focus group discussion, July 2015). Some women in the focus group in Buya 1 village noted that many women are skeptical about REDD+ due to their experience with past development projects. These women indicated that many past interventions in the village had excluded them from the benefits. Women in both the study villages were afraid that REDD+ might reduce their access to forest, which they depend on, for their livelihoods while some men saw REDD+ as a new opportunity for them to generate income from alternative livelihood activities.

However, the men who received information about the village meeting did not circulate it to all the village members. A few men told their wives about the meeting as revealed in the focus group discussions. The customary chief of Buya1 village noted that the individual who was assigned to announce the meeting to all village members gave the information to selected households—mainly clan members and friends. Some men who had access to the radio mentioned at the village assembly meetings in Gemena pilot that they have heard about REDD+ as a new strategy the government of the DRC has engaged to protect the forest.

4.3.2. *Women's exclusion from REDD+ village organization: a question of household heads?*
WHRC together with its partners have established new village organization for REDD+ in both the pilots. Before the establishment of these organizations, meetings were organized to inform the local people and to set up the process. Across both pilot very few women participated in the process of establishing these village organizations compared to men. The women noted that the time for these meetings conflicted with their household chores and farm activities. The men were free to participate in these meetings since the household division of labor does not constrain them. Some women in the Buya 1 village indicated that the meeting venue was not conducive for them. The meetings took place at the meeting venue of the customary chief's residence and there were no seats for the women since the men had occupied them. Some women had to bring their own seats while others sat on the floor. The women who participated in these meetings indicated that they were motivated to participate because of the per diems they received after these meetings.

The organizations were established to ensure that all the households in the village are included in the project activities and benefit streams. The mechanism used to establish these village organizations excluded women from participating in decision-making regarding REDD+ in the village. In both pilots, only the household heads were selected by the project organizer to form groups that were used to elect the executive members of the organization. More than 80% of the household heads in both pilots are men. Hence very few women, mostly single women and widows were selected to form these groups.

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In Buya 1, 370 household heads were listed of which only 52 were women. In total, 37 groups were created using the list of household heads in the village. Each of these groups then selected two members to represent them in the REDD+ village committee. This committee of 74 members then elected an executive committee of four members (President, vice president and two technical advisers) known as the REDD+ Focal Point of the village. The president elected is the village customary chief and the vice president a woman. It was a perquisite for WHRC that a woman should be a member of the executive committee.

In Bokumu-Mokola, 360 household heads were listed of which only 21 were women. In total, 36 groups were created from the list of household heads. Each of these groups then selected two members to represent them in the REDD+ village committee. This committee of 72 members then elected the executive committee of four members (President, vice president and two technical advisers) known as the REDD+ Focal Point of the village. The president elected is a customary landowner and no woman was elected to the executive committee. The criteria used to elect members of the executive committee excluded women to be members. Although the village organization has been established, it still lack the rules and bylaws to function in both pilots, and will require legal recognition.

4.3.3.   Early REDD+ demonstration activities: Are women included?

WHRC and the local partners have been implementing some early REDD+ demonstration activities in Buya 1 in the Bikoro pilot. These activities include village water project, construction of a school building, samples of improved household cooking stands, samples of artisanal oven to dry and process cassava, agroforestry demonstration plots for fruit tree nurseries, soil enrichment plant and demonstration plots for rice cultivation in swamp forest. No demonstration activity has been introduced in Mokumu-Mokola village in Gemena pilot. The water project was the first REDD+ project activity implemented in Buya 1 in June 2014. The WHRC's partner BDD constructed three wells at different locations in the village. Based on information from the interviews and focus group discussions, the local people apparently had negative views on the water project. The wells constructed did not provide water to the village during the first dry season in 2014. The women complained that they are now forced to trek long distances to fetch water which increased their workload. They indicated that although it is their role in the household to collect water, they were not included or represented in the decisions to construct the wells, their locations and the planning of the project. Very few women, compared to men, participated in the well construction as laborers. These women complained that they were forced to use their own tools without compensation and they were also not paid. One woman confirmed that she was injured during the construction work and was not treated by BDD and the village authority.

Women did not participate in the agroforestry demonstration plots, fabrication of bricks to construct the school and the rice cultivation plot. The men's focus group mentioned that these activities were mainly for the men because they require physical strength. In addition, though women have good knowledge about farming and use of forest to improve food security, only the customary landowners (only men) were involved in the agroforestry demonstration activities.

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Despite strong concern expressed by the staff of WHRC to include women in the project activities and to ensure that women are strongly represented in all project activities, their project partners have included only men in the ongoing activities on the pretext that these activities are for men. Women's associations are not recognized as partners in the project. The staff of WHRC mentioned that various activities have been planned for women to be implemented, but the project implementation is behind schedule due to delays in disbursement of funds from the fund manager and national government.

5.   DISCUSSION

In this paper, we investigated gender roles and knowledge of forests, inclusion in forestry and development interventions and the barriers of women's inclusion in decision-making structures and processes. The findings show that, women and men's day-to-day economic roles, knowledge and responsibilities differ substantially in the REDD+ pilot sites. These differences are created by existing socio-cultural norms in the study area that constrain women's ability to participate in forest governance processes. Two key findings from the results are discussed below.

5.1.   Gender roles and inclusion in decision-making structures and processes

The findings reveal that gender roles and responsibilities shaped women and men's knowledge of forests. Compared to men, women's knowledge of forest is more directly to household food consumption and health, which is particularly important for food security. This knowledge is important for the household to cope with shocks such as drought, food shortage and low income. The men knowledge of forest is linked to high valued resource for market exchange. Given that women's knowledge is linked to subsistence and not economic exchange, this knowledge is often under-valued in forest management (Guarascio et al. 2013; Peach Brown 2011). For example, women in the study sites are ascribed specific roles such as childcare and household care (cooking, cleaning, fetching wood and water, etc.) based on socio-cultural norms, and not necessarily from ability based on comparative advantage. These domestic chores constrain women to engage in more income generation activities, such as harvesting of caterpillars in long distances or being involved in logging activities and charcoal production.

In addition to the socio-cultural ascribed roles, the physical strength and product preference influence the ways men and women access and use the forests (Colfer 2013). Opening up the forest for agriculture was considered as men task in the study due to their physical advantaged while the women are more engaged in planting and weeding harvesting. The forest products harvested and crops cultivated where different between men and women. The men are engaged in high valued food/cash crops and NTFPs for market exchange while the women are engaged in food crops and NTFPs for subsistence and food security. These findings resonate with findings from Cameroon where Bantu women role in agriculture was vital for food security (Brown & Lapuyade 2001; Veuthey & Gerber 2010). These findings reveal that gendered roles and responsibilities of forest use and management are rather nuanced and require policy makers to consider these nuanced in gender roles while designing localized and context-specific policies.

We characterized the levels of inclusiveness in decision-making structures and processes using the Agarwal (2001), typology of participation. The findings reveal that compared to men, women exhibited nominal participation in the different interventions. Women are not involved in decision-making regard forestland allocation and management in both pilots. The elderly and virtues women often represent women in the village traditional council but their voice over decision-making is limited. This finding highlight the fact that women's representation in village traditional council does not necessarily lead to the highest level of participation as also documented in other studies (Tiani et al. 2016; Tyagi & Das 2017).

Women also exhibited nominal participation—membership of the different OPD recognized in the food security project in Buya 1 village. Some women especially the Batwa women could not even attain nominal participation because they could not afford membership fees, hence are excluded from the food security project. Even though some women are members of these OPDs, they attend project meetings just as listeners as their voices are ignored in decision-making matters. Moreover, many are motivated to attend these meetings just to benefit from the per diems. In addition, women are under-represented in the decision-making bodies (executive committees) of these associations. Their inclusion in these executive committees is externally imposed and their voices are excluded in decision-making matters. This clearly demonstrates that women's inclusion in the food security project is considered as window dressing (Awung & Marchant 2017; Mohanty 2004).

However, a few women in these OPDs were able to make their voices in decision-making processes. They are women who have experienced some forms of outside exposure, training and education. Although, majority of the women exhibited nominal participation in the food security project, they were able to use other forms of accountability mechanisms—"weapons of the weak" to influence the male dominated structures (see Scott 1985). These forms of accountability mechanisms are quite common and frequent in many marginalized groups in the Congo Basin (Oyono 2004).

By contrast, in Mokumu-Bokola, women participate more in the agricultural training project and exhibit more active participation. Women were highly represented as members in the different associations established by the project. This finding supports the ideal that women's high representation (critical mass) in mixed groups have a greater chance of self-sustained collective action outcomes (Arora-Jonsson 2014; Tyagi & Das 2017). Nevertheless, women's high representation in these groups was because men were rather not interested in the project. In situations where men are interested in the project, women are often represented through separate women's group like in the case of the food security project in Buya 1 village. This finding illustrates the fact that genuine gender transformational change in forestry and development interventions can only occur if the socio-cultural basis of exclusion (men's entrenched claims) is weakened (Arora-Jonsson 2014).

Women's high representation was also due to the nature of the decision-making body of these associations. In Mukumu-Bokola, women were under-represented in the executive committees of these associations but the decision-making body was the general assembly allowing

them to make their voices heard in decision-making matters. This was different in Buya 1 village where the executive committees were the decision-making bodies and women were under-represented in these committees. This finding reveals that for women to have a strong voice in forestry and development interventions, intervening agencies need to consider the local heterogeneity of gender roles and differences in the establishment of decision-making structures (Coleman & Mwangi 2013; Pandolfelli et al. 2007).

The REDD+ social safe guard clearly advocates gender mainstreaming in REDD+ piloting and for full and effective participation of men and women in REDD+ activities (Gurung & Quesada-Aguilar 2009; Seymour & Angelsen 2009). Findings from our study reveal that REDD+ piloting is reproducing gender hierarchies in decision-making structures and inclusion in REDD+ activities. For example, the mechanism used to establish REDD+ village organizations excluded women from participating in decision-making regarding REDD+ in the village because the membership was drawn from heads of households who are mainly men. While the introduction meetings of REDD+ were aimed at informing the local people about the project, information about these meetings was mostly received by the men and shared among them. Women's limited access to information about REDD+ limits their ability to engage in REDD+ and articulate their interests. This conforms with what Larson et al. (2015) findings that women's limited knowledge about REDD+ was due to how information was disseminated and hence generally affect their participation in REDD+ implementation. In addition, household division of labor gives men more leisure time to be readily available to access information that comes into the village. Moreover, women have limited access to communication devices such as radio in the pilot sites since the men own and control households' communication devices. This reaffirms the issue of gendered ownership and access to household assets (Pandolfelli et al. 2007).

Women's participation in meetings strongly motivated by the per diems is often portrayed as captives to incentives rather than gender representation (Awung & Marchant 2016). In addition, women were also excluded from participating in the different REDD+ demonstration activities. Most of these activities were labelled as men's tasks, as perceived by the REDD+ pilot project organizers, as they required physical strength. The few women who participated as labourers in the water project were poorly paid compared to men while others were injured and not compensated. Given women's limited access to material resources (forestland, household assets) they had nominal participation—physical presence in meetings to earn per diems and working as labourers in project activities that provide financial relief to them, but their sense of inclusion in the project seem quite low.

5.2. Perceived barriers to women's participation

The findings demonstrate that the key barrier to women's full and active participation in these interventions is rooted in the cultural and social norms of the study area. Social structures in both pilots are characterized by patrilineal system of inheritance and access to material resources. These socio-cultural norms define a set of behavioral standards to which women need to adhere and are still very strong in Equateur province. The patriarchal socio-cultural norms of the study area

ascribe men as household heads giving them authority and decision-making power and control over their wives' participation in these interventions. Moreover, as household heads, men have the right to membership in the REDD+ village groups, and right to access information and process them on behalf of their households. Most men in the project area are not ready to prioritize women's participation at the expense of household chores. Early REDD+ initiatives in Nepal also confirmed that men's power was influential in deciding women's participation in REDD+ processes in local-level forest institutions (Khadka et al. 2014). Men control socio-cultural norms to their advantage and may relax customary norms where they see that it is not to their direct benefit, as reflected by women's high representation in the agricultural training project of Mukumu-Bokola village.

The socio-cultural norms are embedded in virtually every sphere of activity in the pilots and prescribe behavior and social order. They define household division of labor, resources, public behavior and social perceptions about women's contributions, needs and abilities in the study. Many of these norms are regarded as what Bourdieu (1977) termed "doxa"-accepted part of social order not open to contestation, while some are immutable and some are contested by emerging emancipatory ideas and processes in the Bikoro pilot (see Stiem & Krause 2016). Although men are engaged in activities that require physical strength, household division of labor allow them more leisure time to relax, socialize and engage in non-productive activities. Since men have more leisure time and dominate the activities in the public spheres, they are often ready and available to control the structures created by these interventions. On the other hand, women's heavy domestic responsibilities constrain their time commitment to participate in the decision-making activities. These findings indicates that women have a higher opportunity cost of their time than men, hence any intervention that considers women's time factor may have a better chance of succeeding than those which assume that women and men share the same motivations (Agarwal 2001; Coleman & Mwangi 2013; Pandolfelli et al. 2007).

The socio-cultural norms also ascribed different attributes, skills and abilities to men and women in the study area. For example, many women reported that they do not feel confident and capable of talking in front of male community members in meetings. In addition, gender segregation in public sphere limits their ability to engage in these meetings. Most of the women invited in meetings of the food security project in Buya 1 village sat on the floor while some brought their own chairs. Other scholars have documented how women who feel intimidated by gender segregation in the public sphere, may sit in the back of the room or on the floor and simply observe the decision making processes (Nightingale 2002). Women who do speak up are often viewed negatively; their efforts to gain voice in-group projects are viewed as attempts to subvert gender norms. Moreover, women's knowledge of forests and contribution are undervalued in forest management decisions while men's knowledge is valued and considered as knowledge that counts in forest management decisions (Guarascio et al. 2013). Men's knowledge is embedded in the customary system of forest management—men control and make decisions. The undervaluation of women's knowledge affects their sense of inclusion in forest management decision-making and excludes them from the benefits. In addition, in the REDD+ water project in Bikoro, the women hired were not paid because their contribution was undervalued. Similar

findings have been reported by other scholars in Cameroon (Tiani et al. 2016). In community forestry programs in India and Nepal, Agarwal (2001)found that women were perceived as having little to add in terms of forest conservation and were frequently not invited to group meetings.

The social norms in the project area do not encourage education of girl children. Instead, young girls are forced into early marriages (Ragasa et al. 2012). The low education of women limits their social acceptance and self-esteem and their ability to articulate their needs in village meetings. In both the pilots, women were perceived to have limited analytical thinking ability to be members of the executive committees because of their low level of education. The pro-active women in the food security of Buya 1 village use their exposure, education, social network and confidence to engage in the public arena. In the Congo Basin, many studies have shown how women's education has positive effect in weakening the restrictive norms, combatting men's negative attitude and enhancing women's participation (Guillaume 2017; Stiem & Krause 2016).

Likewise, women who have access to and control over land and material resources increase their ability to influence decisions both within the households and in the community (Pandolfelli et al. 2007). In the project area, women do not control forestland based on customary laws, but maintain access via their husband or male relations (father, uncles, sons). This norm restricts them from participating and benefiting directly from any forestry interventions. Their limited access to and control over material resources of the households means they lack financial resources to become members of the OPDs. Since benefits from these OPDs are shared only among fee-paying members, they are excluded from these benefits. Ethnicity further restricts the Batwa and especially the Batwa women from participating. They are socially excluded and considered as laborers rather than full community members with agency. The Batwa are also secluded due to their lifestyle and experienced antipathies in these communities (see Samndong 2015; Stiem 2014).

6.   CONCLUSION

This study shows that the gendered nature of knowledge, use and control over forests, are not always recognized in forestry and development interventions. Although women's knowledge and use of forests is important for food security and household cash income, they have less voice than men, and occupy nominal positions in forest decision-making and benefit sharing arrangements compared to men. Women have limited access to land and other financial opportunities to increase their bargaining power to influence decisions and benefits from forestry and development interventions. Existing socio-cultural norms in the REDD+ pilot sites constrain women's abilities to be equally included in decision-making processes and benefit sharing from forestry and development interventions. These socio-cultural norms are embedded in virtually every sphere of activity in the pilots and prescribe behavior and social order. Women's limited access to information in the ongoing REDD+ pilot project further reduces their bargaining power. It would seem that the REDD+ pilot project views the households as a homogenous unit in the establishment of REDD+ village organizations. This further reproduces gender inequality in REDD+ decision-making processes. Moreover, women's participation in early REDD+ activities is constrained by the existing socio-cultural norms embedded in the participatory spaces.

Understanding the circular nature of women's inability to participate in the projects due to socio-cultural constraints is important to design localized and context-specific policies and practices. Women's subordination within forestry and development interventions and the REDD+ in particular, needs special attention. Although women and men are able to influence change in institutions in their favor, women's lower level of power resources makes such outcomes more difficult to achieve. Thus, REDD+ actors should recognize the complex relationship between forests, gendered power dynamics, and REDD+ policies and practices, not only at the local level but also across the policymaking spectrum. This complexity of both gender and institutional change means that favorable outcomes are not automatic. Making REDD+ gender transformative, however, depends on how REDD+ actors can be more effective in fostering gender equity by manipulating the existing socio-cultural norms.

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PAPER 5

The Participation Illusion: Questioning community participation in a REDD+ pilot project in Democratic Republic of Congo

RAYMOND ACHU SAMNDONG[1]

1) PhD Fellow; Norwegian University of Life Sciences, Department of International Environment and Development Studies
   Email: raymond.samndong@nmbu.no/rayasboy@yahoo.com

SUMMARY

This paper investigates the introduction of REDD+ in two pilot sites in the Equateur province of the DRC, focusing on the issues of community participation. Using information collected through household questionnaires, interviews and focus group discussions, the paper shows that community participation at both sites was characterized as 'tokenism' whereby the communities were consulted and informed, but never achieved managerial power or influence over the REDD+ pilot project. The decision for the communities to join REDD+ was not democratic and the information provided during the process of introducing REDD+ was not sufficient for the communities to make an informed decisions to join or not. The project organizer had full control over the dissemination of information. Community participation in the REDD+ project did not extend beyond labor supply in activities and attending meetings for per diems. The institutional basis for enabling 'full and effective community participation' is weak and excludes women. The paper argues that ensuring meaningful participation as defined by the REDD+ social safeguard guidelines might be difficult to achieve if social inequalities and local power relations are not acknowledged and addressed in the implementation of REDD+.

Keywords: community participation, effectiveness, empowerment, REDD+, the DRC

INTRODUCTION

In the last few decades, community participation in forest conservation and development interventions have undergone increased interest (Brosius et al., 1998, Sandbrook et al., 2010). Increasing concern about the effectiveness of community participation has made it subject to strong critical analysis (Hickey and Mohan, 2004, Penderis, 2012). There is evidence that in some community participation exercises, community involvement is managed strategically in order to avoid conflict and dissent and to exert control over local knowledge and actions (Cleaver, 1999, Cornwall, 2008, Brown, 2002). In many of these interventions, local people's voices were undermined in decision-making processes and planning, but their participation was used as an instrument for legitimation and to improve the efficiency and effectiveness of projects (Cooke and Kothari, 2001, Mohanty, 2004, Baviskar, 2005).

The development of a social safeguard under the international climate regime, known as Reducing Emissions from Deforestation and Degradation and Enhancing Carbon Stock in tropical forests (REDD+), re-emphasize the importance of 'full and effective participation'[1] of local people in design and implementation of REDD+, and in the equitable distribution of benefits (UNFCCC, 2010). This safeguard recognizes community participation as an important element for creating legitimate REDD+ policies at the local level (Gebara, 2013, Jagger et al., 2012). Early studies on community participation in REDD+, as well as studies on Payment for Ecosystem Services (PES), have mostly focused on community rights and access in decision-making processes related to the project introduction, land use planning and benefit sharing (Gebara, 2013, Aguilar-Støen, 2015, Krause et al., 2013, Brockhaus et al., 2014). By focusing on decision-making processes, these studies implicitly focus on power and the exercise of power in the spaces constituted by REDD+ to enable community participation (Gaventa, 2006). Power might appear to be structural since REDD+ is initiated from the outside and a top-down approach seems the only mechanism for instituting REDD+ at the local level (Resosudarmo et al., 2012, Vatn et al., 2017). This approach might enable REDD+ initiators to conceal certain information in an attempt to shape the outcomes of decision-making. The overarching issue here is how such a process is structured to ensure that local voices and rights are reflected in the outcomes of decision-making. Nevertheless, achieving

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[1] See the 2010 Cancun Agreements: http://unfccc.int/meetings/cancun_nov_2010/meeting/6266.php

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full and effective participation is not easy; indeed, many community participation processes in most REDD+ pilot initiatives are being implemented poorly (Dooley et al., 2008, Ribot and Larson, 2012). In cases where community participation has been effectively implemented, it has proven to be a key element for the success of REDD+ in terms of both empowering local stakeholders and addressing some of the underlying social drivers of deforestation (Hajek et al., 2011).

In view of this, the Democratic Republic of the Congo (DRC) has developed social and environmental standards for REDD+ aimed at the "full and effective participation" of a wide range of stakeholders within the country (Kipalu and Mukungu, 2013). As the country's REDD+ strategy moves to its implementation phase with the initiation of many REDD+ pilot projects, it is critical to examine to what extent effective participation of local people is carried out in practice. To help inform the policy debate and the implementation of future REDD+ initiatives in the DRC, this paper analyses community participation in the decision-making processes of two REDD+ project pilot sites in the Equateur province of the DRC. The paper asks the following questions: 1) Who were involved in the introduction of REDD+ in the pilot sites and how was this involvement organized?; 2) How do local people perceive the introduction process of REDD+ in their communities; and 3) What are the challenges in promoting meaningful local participation in the REDD+ process of the DRC? The paper argues that full and effective participation of local people in DRC's REDD+ program is unlikely if barriers limiting the ability of forest communities to participate meaningfully in decision-making processes and benefit sharing are not recognized and addressed.

The paper is divided into five sections. The first presents the theoretical framework employed. Section two provides the context of community participation in forest governance in the DRC and its implication for the country's REDD+ program. Section three provides geographical context and explains the research methods used for the study. Section four presents the findings about community participation in the introduction of REDD+ and their perception toward this process. Section five discusses the findings in relation to the challenges of ensuring meaningful local participation in REDD+ implementation in the DRC.

CONCEPTUALIZING COMMUNITY PARTICIPATION: AN ANALYTICAL FRAMEWORK

Local communities are not homogenous, rather they are composed of people with different social statuses and characterized by relations of power and privileges. Acknowledging heterogeneity within a village or community, this paper defines participation as "the involvement of a significant number of persons in events or actions which enhance their well-being, e.g. their income, security or self-esteem" (Cohen and Uphoff, 1980:214). This definition places participation within a tradition that emphasizes the importance of enhancing capabilities, the ability of ordinary people to manage conservation and development initiatives and to influence, implement and control activities that are essential to their wellbeing (Chambers, 1997, Sen, 1999). The key idea of community participation in interventions is inclusiveness—the inclusion of people in decision-making, formulating plans, controlling resources and implementing decisions over their own lives (Agarwal, 2001). Based on this idea, governments, donor agencies and NGOs have placed increasing emphasis on community participation in all forms of development and conservation interventions (Cornwall, 2008, Penderis, 2012).

However, the mechanisms of inclusion of local people seem to vary within these interventions. On the one hand, local people might be included through provision of information and engagement in activities to achieve the aims and objectives of development programs and projects more efficiently and effectively (Nelson and Wright, 1995, Cooke and Kothari, 2001). On the other hand, they might be included through a social process of empowering and transforming individuals and communities in terms of acquiring skills, knowledge and experience, leading to greater self-reliance (Burkey, 1993, Hickey and Mohan, 2004). These two distinct approaches of inclusion have been conceptualized as the "effectiveness" and "empowerment" types of community participation in development and conservation interventions (Cleaver, 1999). The *effectiveness* approach views participation as an instrument to achieve better project outcomes, with reduced cost, while external actors make the key decisions. The *empowerment* approach views participation as a process which increases the capabilities of individuals or groups to enable them to improve their own lives and facilitate social change to the advantage of the local people in general and marginalized groups more specifically (Cleaver, 1999, Brown, 2002). These two approaches of participation are neither clear-cut nor mutually exclusive, but represent different

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purposes and approaches to promote community participation in development interventions (Cornwall, 2008).

Central to the idea of inclusion, is who to include in decision-making and how to achieve this? What information should be offered and by whom. There is also the issue of who should control the process of information and decision-making? These questions imply emphasizing power relations among the actors involved in community participation processes taking into account the forms of power being exercised (Gaventa, 2006, Lukes, 2005). An important dimension here is the complex relationship between human agency and social structures (Cleaver, 1999, Cornwall and Gaventa, 2000, Penderis, 2012). The effectiveness argument typically implies less focus on the complex relationship between human agency and social structures, hence, reproducing inequality (Penderis, 2012). This dynamic is articulated by Bourdieu (1989: 16) when stating, "that the construction of social reality by agents is determined by their perceived position in social space and hierarchical status, which are shaped by the economic, social, cultural and symbolic power they possess and the multiplicity of interaction in their personal life". In line with this argument, Giddens (1984: 16), notes that "knowledge, power and capability play a crucial role in both the actions of agents and the structures that are created over space and time".

In the context of this paper, the inclusion of local people in the introduction of REDD+ is characterized using the Arnstein (1969) typology[2] of participation. Citizen control appears at the top of the ladder and non-participation at the bottom, spanning a range from empowerment to instrumental use of participation (Figure 1). In between these two categories is 'Tokenism', which includes information, consultation, and placation and according to Arnstein, tends to be the form of participation most typically promoted by development organizations.

For Arnstein, consultation is used as a means of legitimating already made decisions. She associates citizen power, which includes citizen control, delegated power and partnership, as empowerment. Arnstein argues that participation at higher levels is empowering and fair to citizens who then have genuine control and influence in decision-making and the broader political and social processes. For empowerment and equity to occur, citizens must be able to exercise agency and influence the wider structural factors shaping the REDD+ interventions.

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[2] PRETTY, J. N. 1995. Participatory learning for sustainable agriculture. *World development,* 23**,** 1247-1263. and WHITE, S. C. 1996. Depoliticising development: the uses and abuses of participation. *Development in practice,* 6**,** 6-15. offer further typologies of participation.
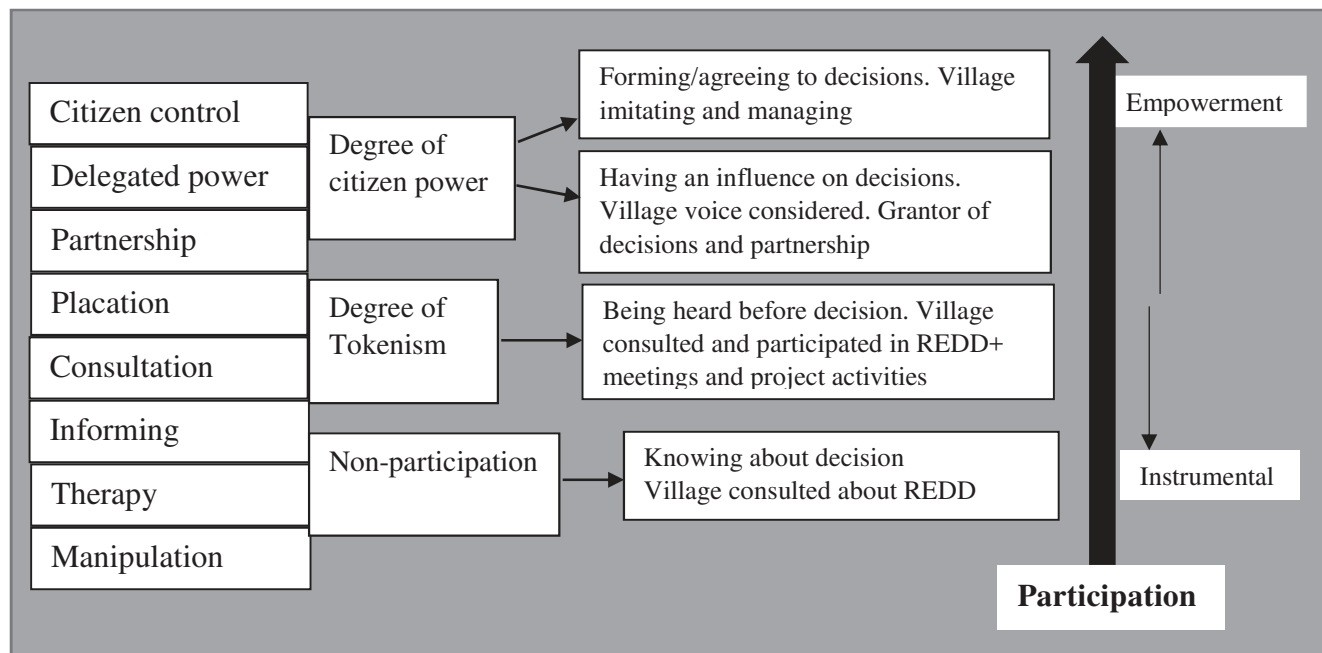
Figure 1: Characterizing community participation in REDD+ implementation adapted from (Arnstein 1969)

The operationalization of this framework takes into consideration both the effectiveness and empowerment argument of participation. Thus, it goes beyond the provision of information and involvement in decision-making to investigate the broader context of understanding the socio-political nature of the communities. Therefore, in the context of REDD+, for empowerment to occur at the local level, communities must exercise their agency to control and influence REDD+ project decisions. The ability to influence decisions depends on the complex relations between actors' interests, power and institutions.

GEOGRAPHICAL CONTEXT AND RESEARCH METHODS

Geographical context

The REDD+ pilot project in the Équateur province known as *projet Zamba Malumu*[3] is managed by the Woods Hole Research Center (WHRC) in collaboration with the Ministry of Environment and Sustainable Development of the DRC. The key objectives of the pilot project is to increase the capacity of provincial stakeholders for the development of REDD+ strategies and to design and implement community based REDD+ pilot projects with potential for continued carbon financing.

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[3] Zamba Malumu means the forest is good.

To achieve these objectives, in 2011 WHRC signed partnership agreements with four regional actors (Bureau Diocésain du Développement (BDD), Communauté Evangélique de l'Ubangi, Mongala de Gemena, Jardin Botanique d'Eala and Université du CEPROMAD) to implement different components of the pilot project in the two pilots areas. In addition, a project consultant was hired to support the local people in one of the pilots – that of Bikoro – to facilitate initial REDD+ demonstration activities.

The REDD+ pilot project is located in both Bikoro and Gemena territories (see map 1). The Bikoro territory lies in the southwest of the Equateur province[4]. Its dominant vegetation is equatorial swamp rainforest inundated with water throughout the year, making road construction and maintenance difficult (Yamba, 2009). The Gemena territory lies in the northwest of the Equateur province[5]. Here the dominant vegetation type is dense and humid, while equatorial lowland rainforest transits into evergreen savannah woodland and grasses in the north. The populations of both pilot sites practice slash and burn shifting cultivation, extracting non-timber forest products, fishing, hunting and producing charcoal for their livelihoods
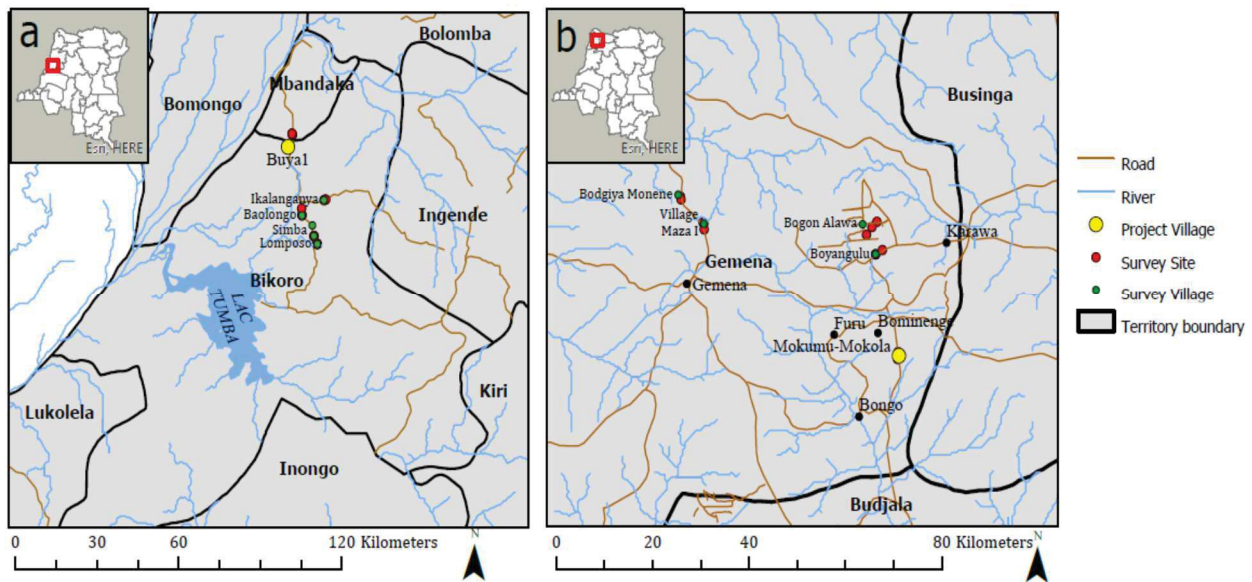
Figure 2. Map of the two pilot sites in Équateur province: a) Bikoro territory, Buya1 project village, b) Gemena territory, Bokumu-Mokola project village Source: Chapman (2016)

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[4] The Equateur province was divided into five new provinces in July 2015, following the national decentralization reform, but our analysis is based on the province political and governance structure before the division. The province where Bikoro territory lies is still called Equateur.
[5] The Gemena territory is now localized in the Sud-Ubangi province, one of the new provinces

The WHRC REDD+ pilot project only covers Buya 1 village in Bikoro territory. This village is made up of two main ethnic groups—the Bantu and the Batwa Pygmies[6]. The Bantu is divided into different tribal groups – the Mongo, Ntomba, Ekonda and other groups. The Mongo tribal group in the village are considered as the customary landowners (*ayant droit*) while the other groups including the Batwa Pygmies are considered the migrants with limited rights to forestland. In the Gemena pilot area, the project covers only Bokumu-Mokola/Mbongo village, which is made up of a dominant Bantu tribal group known as *Ngwaka* and other Bantu tribal groups from neighbouring territories.

Both pilot sites are governed by two authority structures—statutory and customary (see Samndong and Vatn, forthcoming). The two pilot sites are different in terms of their landscapes, economic activities, accessibility and external interventions. The Bikoro pilot site has experienced several interventions related to agricultural development, forest governance and conservation from different international and national non-governmental organizations (NGOs). These interventions have resulted in the establishment of village organizations known as Peasant Development Organizations (OPD) that combine informal and formal elements of collective action, in coordinating delivery of e.g., development-oriented agricultural services.

The Gemena pilot site has, for political reasons[7], experienced very little of these interventions. The local people are organized around voluntary church organizations and grass-roots mutual aid groups. These organizations are self-sustaining voluntary organizations and while few in number are more trusted by the local community compared to the customary and statutory authorities. The church organizations provide social services, including schools, healthcare and food security initiatives.

Research methods

Field research was conducted from July to August 2014, July to August 2015 and July to August 2016. Information was obtained through household questionnaires, semi-structured interviews,

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[6] The Batwa is an ethnic group more commonly referred to as "Pygmy" in the region. They are also referred to as *Peuples Autochtones* (PA) in French, which means indigenous people.

[7] The region has witnessed limited presidential supports under the Kabila administration because it is the strong hold of the opposition party Mouvement de Liberation de Congo (MLC) and a strong hold of the formal president Mobutu.

focus group discussions and participant observations. 75 households from Buya 1 village in Bikoro and 76 households from Bokumu-Mokola/Mbongo in Gemena were surveyed. The questionnaire collected data on local people's knowledge about REDD+, their participation in the REDD+ introduction, the establishment of a REDD+ village organization and the implementation of early REDD+ demonstration activities. It is important to note here that the REDD+ demonstration activities were only being implemented in Buya 1 village at the time of the field research. Purposive and stratified random sampling were used to select the respondents for the survey. The intention was to ensure that 70% of the survey sample covers people who participated in REDD+ meetings and activities and the rest selected among non-participants. Random selection was done with these groups based on the attendance list and a list of village households respectively. The stratification was to ensure a good representation of the sample and good coverage of those involved in the REDD+ meetings and activities. The stratification also ensured that 'Batwa Pygmies' in the Bikoro pilot site were represented in the total sample.

In total, 72 in-depth interviews were conducted in French and Lingala with six different types of actors—including customary authorities, local administrative authorities, staff of the different intervening agencies, executive members of village associations, staff of the REDD+ pilot project and logging operators. The intention was to gather information on the transfer of power and resources to local authority structures by intervening agencies, and to examine how these powers and resources have influenced how authority structures include local people in decision-making processes, project implementation and benefit sharing.

To capture local people's insights about their inclusion or exclusion of the REDD+ introduction process, focus group discussions (FGDs) were organized in each pilot village. The focus groups considered issues related to power relations and access to resources. The FGDs provided information about local people's knowledge of REDD+, participation in REDD+ project activities, the distribution of benefits, their perception of REDD+, their interactions with the local authorities and with the REDD+ project organizer. In Buy 1 village, five focus groups were organized—one each for men, women, landowners, migrants and Batwa Pygmies (12 participants per group). In the Mokumu-Mokola/Bongo village, separate focus groups were organized for men, women, landowners and migrants. The Batwa Pygmies in the Buya 1 village and women in both pilots were treated in separate groups because they socially and economically marginalized and cannot voice their concerns in front of men and customary landowners.

LEGAL STRUCTURES AND POLICY FRAMEWORKS OF COMMUNITY PARTICIPATION IN FOREST GOVERNANCE AND REDD+ IN THE DRC

Forest governance in the DRC has been centralized with an emphasis on regulating industrial logging (Debroux et al., 2007, Fétiveau and Mpoyi, 2009). Land and forest ownership and utilization is defined by the 1973 Land Ordinance and the 2002 Forest Code. These two legal texts codified the state as the sole guardian of all land and forest resources with the authority to exclude and allocate rights to use to the local population and logging companies (GDRC, 2002). Despite the establishment of state ownership of all land in the DRC, a significant portion of the forestland remains under the control of customary authorities (Oyono and Nzuzi, 2006).

The Forest Code makes provision for community forest management as a means to empower communities and promote community participation in resource management. This provision was enacted as late as August 2014, and the procedures and guidelines for implementation are still being developed. In addition to this legal framework, the DRC embarked on a decentralization reform in 2006, with the intention to transfer power and fiscal resources to the regional and local levels (GDRC, 2006). However, this reform process is proceeding slowly; at present elected governments only exist at the province level and are yet to be established at the level of territories and districts (Samndong and Nhantumbo, 2015).

Article 89 of the Forest Code makes provisions for local people to be involved in forest governance via a social agreement (*cahiers de charge*), with logging companies (GDRC, 2002). This agreement should specify actions to improve the social infrastructure of communities living around logging concessions and provide direct compensation to the clans with customary claims to the forestland. The guidelines for the negotiation of social agreements lack clear descriptions of the rights and obligations of the logging company, the state and the local population. The Forest Code places the right to negotiate the social agreement with the logging companies to the customary authorities, on behalf of their local communities. Experiences shows that the agreement benefits only families and clans with customary claims to forestland (Samndong, 2015). In the absence of an institutional structure, ensuring negotiations and management of logging compensation from the social agreement, a ministerial text was enacted in 2010 for the creation of *Comité Local de Gestion* (CLG), known in English as Local Management Committee, to take care of this

at the local level (Samndong and Nhantumbo, 2015). This administrative text still recognizes customary authority as the main supervising authority for the CLG.

In the absence of a competent organizational structure at the local level, intervening NGOs partner with Peasants Development Associations (OPD). OPDs are based on the law of association (Loi de l'Association, *N° 004 du 20 juillet 2001; décret de 1956 sur coopératives*) to implement rural development projects. In addition, the government has set up Agricultural and Rural Management Councils (CARGs), at the local level as platforms for communities to participate in the design of local agricultural programs (Samndong, 2015).

In the context of REDD+, the DRC has made significant progress in its national REDD+ program with the endorsement of its national REDD+ strategy, a REDD+ investment plan and the formulation of social safeguards (Mpoyi et al., 2013, Aquino and Guay, 2013, Fobissie et al., 2014). The national REDD+ strategy recognizes the right to Free, Prior and Informed Consent (FPIC). FPIC implies that local communities have the power to give or withhold their consent to any project which may affect their customarily owned land, their natural resources, their mode of living and their livelihoods (Kipalu and Mukungu, 2013). However, as the DRC REDD+ programs move to the implementation phases with many pilot projects, the REDD+ national strategy provides no details on practical arrangements for its implementation at the local level (Aquino and Guay, 2013).

Civil society organizations are advocating the development of an operational national guide for FPIC and community participation applicable to all kinds of projects related to the lands and the livelihoods of communities (Kipalu et al., 2016). In the absence of a decentralized governance structures, REDD+ pilot projects are working with communities to establish new REDD+ organizations known as Local Development Committees, *Comité Local de Développement* (CLD) recognised by an administrative text[8] to ensure collective choice arrangements that actively involve the majority of community members impacted by the REDD+ projects. The process of establishing the CLD is driven by the NGOs implementing REDD+ in relation with community authorities. The government officials at the regional and local level are somehow excluded in this process and only consulted for the legal recognition of these structures. The corrupt nature of these

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[8] Loi organique n° 08/016 du 7 octobre 2008 portant composition, organisation et fonctionnement des entités territoriales décentralisées et leurs rapports avec l'Etat et les Provinces.

local government officials, their lack of social skills and trust from the communities to engage and interact with communities are some of the reasons for their exclusion (Mpoyi et al., 2013).

RESULTS

Local knowledge of REDD+

Across both pilots, the awareness of REDD+ was high: 94.7% (N=151) of the survey respondents knew about it. All the respondents of the survey in Gemena pilot confirmed that they had heard about REDD+ while 89.3% of respondents in Bikoro pilot (N=75), confirmed the same. Table 1, shows that significant number of respondents (48.3%) in both pilots, understood REDD+ as a forest protection project, while 25.2% understood REDD+ as a project that will provide them with alternative livelihoods. Very few respondents (2.6%), understood REDD+ as a payment mechanism, while 11% of the total respondents in both pilots had no knowledge about REDD+.

Table 1. Community knowledge about what REDD+ is about (N=151)

Knowledge about REDD+[1]	Bikoro % (N=75)	Gemena % (N=76)	Total % (N=151)
Forest protection	41.3	55.3	48.3
Restrict forest use	8	1.3	4.6
Provide alternative livelihoods	21.3	28.9	25.2
Provide village development	8	6.6	7.3
Payment mechanism	0	5.3	2.6
I don't know	21.3	2.6	11.9

1= these categories were predefined in the questionnaire and the respondents were allowed to choose only one option.

Regarding information about REDD+, of the respondents who knew about REDD+, all stated that they were informed about REDD+ by the project organizer (WHRC); some (39.5%) also got additional information about REDD+ from the media (radio). However, the local people's knowledge of the actors responsible for REDD+ in their communities varied significantly between the pilot sites. While 58.7% of the respondents in Bikoro indicated that WHRC is responsible for REDD+, 38.2% in Gemena reported that the REDD+ village organization is responsible for REDD+. A majority of the respondents (82.8%) in both pilots together reported that their

communities were consulted before the design of the REDD+ project activities. This consultation process aimed to follow the principle of FPIC in which village meetings and workshops are organized to explain the project and solicit inputs and the consent of the local people.

Community participation in the introduction of REDD+

The REDD+ introduction process started with a village assembly meeting, followed by a workshop and the final process of deciding whether to join REDD+ or not. The introduction process was initiated in the two pilot sites at different time intervals. The process was initiated in Bikoro pilot in July 2013 and in Gemena pilot in October 2013. Following from our sample selection procedure, 76.2% of the total respondents in both pilots reported that they participated in the village assembly meeting.

The meetings were organized in both pilots by WHRC in collaboration with the village authority—an invited space open to inform the local people about the REDD+ pilot project objectives, activities and their potential benefit to the communities. The meetings were free and open for all village members to express their views concerning the REDD+. The meeting took four to five hours and the information provided an outline of the importance of protecting the village forest to sequestrate carbon and regulate global climate, the danger of climate change to the locals, the need to ensure sustainable forest management, improve local agricultural practice, community development and alternative livelihoods activities. There was no information concerning forest tenure, the risks or costs of the project to the locals and how the project activities would be implemented and monitored at the village level. No timeframe for the project was given. Although the local people who attended the village assembly meeting were fully aware about the REDD+ pilot project, the information provided did not improve their capacity to influence how the project should be implemented. The project organizer and customary authorities had full control over the space created to inform the local people and control over the dissemination of information. Hence, it provided only information that would motivate the local people to accept the project.

After the village assembly meeting, a workshop was organized for 2 days in both pilots to map out the local people's livelihood activities, constraints, coping strategies and village development challenges as a mechanism to identify project activities as alternatives to reduce local pressure on the forests. The workshop was organized in the form of focus group discussions and the participants were selected based on gender, clans and whether they were migrants or not. 15

participants were selected from each category of the groups (gender, clans and migrants). The intention was to gather the perspectives of these different groups concerning the village livelihood situation.

More men participated in both the village assembly meetings and workshop compared to women in both pilots. This is because the men are the first to receive information about village meetings since following the household division of labor in the project area, men have more leisure time during the day while the women are either in the fields or working in the home. In addition, the village assembly meeting was organized during the day when most women had gone to their farm fields or forest.

In the Gemena pilot, the village general assembly meeting was held in front of the village church and the workshop in the village school. In the Bikoro pilot, both the village assembly meeting and workshop were held at a meeting ground located at the residence of the customary chief. In Bikoro, 28% of respondents were not happy with the meeting venue. The most important reason given was that it is a private place owned by the customary chief. Many Batwa Pygmies noted in the focus group discussions that they are often uncomfortable to voice their concerns in meetings held at the residence of the customary chief. Some village members also noted that the customary chief often chases non-invited people away from his residence when there are visitors or project meetings. The selection of the workshop venue in Bikoro pilot shows that the project organizer and customary chief had full control of the process, setting the agenda and choosing whom to invite.

While WHRC provided information about REDD+ in the village assembly meeting, Table 2 shows that the local people had other sources of information about the project. Significant number (60.9%) of respondents in both pilots together received information from hearsay (rumors) in the village, while 37.1% of total respondents in both pilots received information from the village leaders (customary chiefs).

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Table 2. Source of information about REDD+ in the pilot sites (N=151)

Source of information about REDD+[1]	Bikoro % (N=75)	Gemena % (N=76)	Total % (N=151)
WHRC	78.7	73.7	76.2
Customary authorities	42.7	31.6	37.1
Hearsay in village	74.7	47.4	60.9
Local state authority	0	0	0
Project intervening NGOs	12	2.6	7.3
Village organizations	9.3	0	4.6
Media (radio)	13.3	10,5	11.9
Research student	25.3	15.8	20.5

1= The respondents could tick more than one option

More than half of respondents in both pilots trusted the information provided by the customary authority (66%) and WHRC (64.2%). A Chi square test shows, however, a significant difference between the pilots regarding their trust in information provided by customary authorities (χ^2=21.66; df=1; p=0.000). In Gemena, 84% trusted the information provided by the customary authorities while 48% of the respondents in the Bikoro pilot trusted the information provided by these authorities. The customary authorities in the Gemena pilot have strong local legitimacy since the communities are traditionally homogenous with one dominant ethnic group. The communities in the Bikoro pilot are more heterogeneous with more migrants, while the increased presence of state agents and powerful external interests have weakened the legitimacy of the customary authorities in certain decision-making arenas (see Samndong, 2015).

The men – in the male focus groups in both pilots – confirmed that they understood the objectives and goals of the project based on the information provided in the meeting and workshop. The men in the Bikoro pilot noted quite universally that the REDD+ pilot project would provide them with alternative livelihoods to avoid deforestation and protect the forest for carbon dioxide and thus help regulate global climate. This understanding about the REDD+ pilot project reveals what kind of information was disseminated to the local people during the introduction process. Since the project organizer was the main source information about the project, they had control over the dissemination of information and provided only information that could shape local

people's perception and preferences for forest conservation and development as indicated above. Not all women's responses in the focus groups for the two pilots indicated they understood the objectives and goals of the project.

In the women focus group in the Gemena pilot, participants who claimed to understand the project noted that the project was named 'Zamba Malamu'—a new project that aims to reduce poverty in the village and protect the forest by helping the local people to improve agricultural production on fallow land. In the Bikoro pilot, the women reported that not all the local people are happy about the project. Some people believed, based on their experience from past projects, it would be difficult for this project to benefit all households in the village. Some were skeptical about the project and perceived the project like previous development projects that have deceived them with empty promises without any benefits and concrete activities. The Batwa Pygmies in the Bikoro pilot were also skeptical about the project, because they had been excluded in many past development projects in the village.

Although the local people confirmed that the information provided during the meeting and workshop motivated them to favor the REDD+ pilot project, no meeting was organized in either pilot for the local people to decide whether to join REDD+ or not. The decision for the villages to join REDD+ was made by the project organizer in consultation with the customary authorities in both pilots without any signed agreement. The local people were not involved in the decision and were not informed about who made the decision for the village to join REDD+. By excluding the local people from the decision to join REDD+ and not informing them of who made the decision, community participation in the introduction process was more instrumental than empowering. The information provided by WHRC in the process was linked to a set of formulated incentives to promote goals predetermined to be achieved through participation by the local people.

The local people were confused about who made the decision for their village to join REDD+. There was significant difference between the pilots in who the local people believed made the decision for the village to join REDD+ (χ^2=23.79; df=6; p=0.001). In Bikoro pilot site, 45.3% of the respondents believed that the customary authority made the decision for the village to join REDD+ while in Gemena pilot site, 60.5% of the respondents believed that WHRC made the decision for the village to join REDD+ (Table 4).

Table 3. Respondents' response to who they believed made the decision for the village to join REDD+ in the pilot sites (N=151)

Actors believed to make the decision to join REDD+[1]	Bikoro % (N=75)	Gemena % (N=76)	Total % (N=151)
Project organizer (WHRC)	33.3	60.5	47
Customary authority	44	27.6	35.8
Village general assembly	12	5.3	8.6
Local state authority	4	0	2
Village traditional council	1.3	0	0.7
Village organizations	5.3	0	2.6
Project intervening NGOs	0	6.6	3.3

1= these categories were predefined in the questionnaire and the respondents were allowed to choose only one option.

Information gathered from the interviews and focus group discussions reveals that very little was discussed in the workshop concerning local people's access to and use of forest in the project. This again shows that the project organizer had full control over the process: what should be discussed in the workshop that could shape local people's perception towards a particular objective. There was rather more discussion on the needs and interests of local people that fitted well into the project expectations. For example, the women in the focus group in Bikoro noted that the most important question for them was how they should protect the forest when they live from the forest? Could REDD+ mean that they would not have access to the forest again? While the local needs and interests crowded the discussion, for the women in Bikoro pilot, their main interests regarding the project was to acquire financial help, agricultural support, livestock keeping and access to drinking water. For the Batwa Pygmies, access to land, equal distribution and inclusion were very important. These findings reveal that the discussions in the workshops were concentrated on measures to achieve the project goals rather than assessing local conflicts related to access and use of forests in the pilots.

The people confirmed in the focus groups that the REDD+ introduction process was recorded and that all the documents are with WHRC. Although the local people were motivated to favor the project, no agreement was signed between the local people and the project organizer. The

youths in Bikoro pilot stated that after the workshop, they did request for an agreement from the project organizer, which was not done. At the end of the workshop, some activities were discussed and planned to be implemented in the pilot villages as community benefits from the project. In the Bikoro pilot, these included a village land-use map, construction of a village school, construction of three water boreholes to provide drinking water to the local people, construction of a nursery for fruit trees to be distributed to the local people to support their agricultural production. In the Gemena pilot, the planned activities included the production of a village land use map, construction of water boreholes and the provision of support and training for improved agriculture.

Community participation in the establishment of a REDD+ village organization

According to the survey, 44% (N=151) of survey respondents reported that the idea to establish the REDD+ village organization came from WHRC. This is because existing village organizations in the pilots serve different interest groups and the REDD+ pilot project was an opportunity to establish village organization that represents all interests (see Samndong and Bush, 2017). Before the establishment of these organizations in both pilots, meetings were organized to inform the local people and to set up the process. The majority of the respondents (74.8%, N=151), confirmed that they were motivated to participate in these meetings because of the per diems they received for their participation (Table 4).

Table 4. Respondents' motivation to participate in REDD+ village meetings in the pilot sites (N=151)

Motivation to participate in meetings[1]	Bikoro % (N=75)	Gemena % (N=76)	Total % (N=151)
Information	45.3	64.5	55.0
Per diems	76.0	73.7	74.8
Participate in decision	12.0	5.3	8.6

1= The respondents could tick more than one option

According to the WHRC representatives, these meetings were organized to inform the local people and ensure that they participate in the process. For WHRC, establishing a village organization for REDD+ is the only way to ensure meaningful local participation and to empower the local people

in the pilot project. The organization is important to ensure an effective information flow in the pilots to create awareness among village residents regarding the project and project activities. The organizations shall ensure that all the households in the village are included in the project activities and benefit streams.

While the intention of WHRC was to assist the local people in the pilots to establish the REDD+ organization, WHRC had full control of deciding how the groups should be composed and who should be elected or included in the groups. Local people on the other hand, participated in these meetings as listeners without any power to influence the process since WHRC had already decided the composition of the groups.

In the Bikoro pilot, 37 groups were created using the list of household heads in the village as decided by WHRC. Each of these groups then selected two members to represent them in the REDD+ village committee. This committee of 74 members then elected an executive committee of four members (President, vice president and two technical advisers) known as the REDD+ Focal Point of the village. The customary chief became the president of the executive committee and all the REDD+ meetings were held at his residence. The vice president is a woman; this was a perquisite from WHRC that a woman must be a member of the executive committee. To WHRC, this was intended to ensure some degree of gender empowerment and equity. This finding reveals a real dilemma and challenge faced by WHRC to empower women in the established REDD+ organization, where customary authorities are dominated by men.

In the Gemena pilot, 36 groups were created from the list of household heads as decided by WHRC. Each group then selected two members to represent them in the REDD+ village committee, which followed the same process as above. The executive committee president is a customary landowner. There is no woman in the Gemena executive committee. The WHRC staff who supervised the process noted that no woman was willing to join the executive committee. The women in Gemena perceived the REDD+ as the men's affair because it is related to the use and management of forests.

The mechanism to establish the REDD+ village organization favored men over women as more than 80% of household heads who make up the organization are men. In addition, information for the establishment of the REDD+ village organization was not very clear to the local people. From the survey, 54% (N=151), of the respondents reported that the organization was created to educate the local people about REDD+, 47.7% reported that it was established to

implement REDD+ activities in the village while 24.5% did not know the reason why this organization was established.

Information from interviews confirmed that the idea to elect either the village customary chief or a customary landowner to lead the organization came from the project organizer. According to WHRC, it was a way to 'harmonize' the new village organization with customary institutions in order to build local trust and legitimacy in the village REDD+ organizations. According to the survey, 51% (N=151), of respondents indicated high or very high trust in the executive committee of the REDD+ village organization.

Information gathered from the interviews and focus groups confirmed that the established REDD+ organizations in the pilots are yet to function. The organizations still lack rules and bylaws, and require formal recognition. According to the survey, only 18.7% of respondents (N=75) in Bikoro believed that the organization functions because some members have participated in several meetings at the residence of the customary chief together with WHRC team. This finding reveals that the organization is actually functioning in Bikoro pilot despite the lack of by-laws but very few people are aware. Such a closed process of functioning could influence the transparency and accountability of the organization.

Community participation in early REDD+ activities

As noted above, no REDD+ activity was being introduced in the Gemena pilot during the field research. This section therefore, analyses community participation in the early REDD+ activities introduced in the Bikoro pilot site. Before these activities were implemented, a number of meetings were organized to inform the local people about the type of activities to be implemented in the village. Following the sample procedure, 64% of respondents in Bikoro pilot reported that they participated in these meetings. Those that did not participate complained that the information about these meetings was not circulated to all the households in the village.

Information from the focus groups confirmed that many people only learned about these meetings and activities through hearsay and gossip. Many people noted in the focus groups that the customary chief had strong influence over the projects since he controlled all the information about them. He was in contact with the project team; the team always visited him and all project meetings were organized in his residence. Therefore, if some households were not informed of the meeting preceding the early REDD+ activities, the chief has to be held accountable. These findings

suggest that by making the customary chief president of the REDD+ village organization reinforces his position and the information he received strengthened his capacity to control the REDD+ activities. This shows the dilemma of recognizing customary structure in project implementation in the absence of effective local government.

Among those that participated, 41.3% confirmed that they were motivated to participate by the per diem they received in the meetings, while 30.7% were motivated to participate by the information they received. Following our sample procedure, majority of the respondents (62.7%, N=75) indicated that they were involved in these activities. Their types of involvement also varied. While 56% of respondents indicated that they were involved as laborers, only 12% of the respondents were involved in the planning of these activities in the village. This indicates that community participation in the REDD+ activities was more instrumental than empowering.

Information collected from interviews and focus groups reveal that many REDD+ activities were being implemented in the Bikoro pilot site: participatory land use mapping, construction of water points, manufacture of bricks for school construction, establishment of fruit tree nurseries, introduction of Mukuna plants for soil enrichment, introduction of improved stoves, introduction of locally-made solar dryers for cassava, and the establishment of lowland rice fields. The local people complained that some of the activities were never discussed in the REDD+ introduction process, while those discussed are yet to be implemented or completed. In an interview with the project manager from WHRC, he noted that the project has experienced delays in the disbursement of funds to implement the project activities discussed in the in the REDD+ introduction process. Due to this delay, the project organizer decided to experiment with different activities in the pilot to keep the project active.

Local people also complained about their participation in these activities. For instance, one complaint brought up in the both the men and women focus groups was the water project implemented in 2014 by the project's local partner Bureau Diocésain du Développement (BDD). The three boreholes constructed were unable to provide water to the villagers during the first dry season in 2014. BDD hired local technicians for the project and used low quality materials. Local people complained that they were not involved in budgeting for the designing of the well, and that they were not involved in decisions about the hiring of local technicians and purchase of materials for construction. However, the village customary chief was involved in supervising and monitoring the activity.

A few of the local people were hired to work as laborers for the well construction activity. These laborers complained that they were poorly paid and in a few cases, some claimed they were not paid at all. In the male focus group, one man reported that the tools provided by BDD were distributed to the customary chief and some selected village members. A number of them complained about using their own tools in the well construction activity without compensation. One member of the female focus group confirmed that she was injured in the construction work and was not taken care of by BDD or the village authority. Members of the women's focus group noted that the water project was very important to them since they are responsible for fetching water for the households, but they were unhappy that it was poorly implemented. Similar complaints were made about the brick production activity.

The establishment of the fruit-tree nursery involved mainly the customary landowners as laborers. The migrant population, especially the Batwa Pygmies, were reluctant to participate because they felt that the fruit tree nursery would not benefit them as they do not have customary rights to land in the village. This finding reveals that ethnicity might influence local people's ability to participate and benefit from REDD+ land-use activities. In the case of the introduction of improved stoves, many local people were interested, but soon realized that the stoves could not be adapted to their cooking habits. The improved stove required big cooking pots and consumed more firewood than they expected. Therefore, many of the local people that opted for the stoves have abandoned them and returned to their traditional cooking style. They state that the improved stoves maybe more useful for households with big cooking pots and to prepare food for parties or big ceremonies in the village.

The rice production activity is ongoing, but in both the men and women focus group discussions, some participants noted that the rice field belongs to the customary chief, others said it is owned by the REDD+ project, and others claimed that it is owned by the project consultant. Many people in the village were upset that the customary chief consumed the first harvest from the rice field without sharing it with village members. This clearly shows that the customary chief had control and influence over the early REDD+ activities in the village. In addition, the local people noted that no open meeting was organized in the village to discuss the rice project. In an interview with the project consultant, he explained that WHRC had planned to train the local people on how to cultivate rice in the swamp forest to improve their food security and income. He further stated that the project organized a meeting in the village to inform the local people about

the rice project. During this meeting, the WHRC project team asked for volunteers interested in cultivating rice in their swamp forests, but only a few opted for this. The customary chief was the most enthusiastic. This may be because he had complete information about this activity compared to the others.

Those who participated in the focus group meetings disagreed with the project consultant's version of events. They maintained strongly that no general meeting was organized in the village. Only the customary chief and a few village members were involved in the planning activities organized by the project consultant. In addition, they noted that the project consultant could not speak Lingala (the local language of the population) and this limited his everyday interaction with the local people. He only discussed all the project activities with the customary chief and the chief's friends. Thus, the local people were not well informed about project activities. This was worsened by the fact that the groups created to communicate about the project activities in the village have not yet been made operational.

DISCUSSION

In discussing the findings, I aim at characterizing community participation in the REDD+ project and the associated factors that shaped, enabled or constrained community participation in the REDD+ project. The notion of full and effective community participation advocated in the definition of REDD+'s social safeguards is important to guarantee local legitimacy in REDD+ projects (Jagger et al., 2012). How this notion of full and effective participation is translated into practice is very challenging (Ribot and Larson, 2012, Chhatre et al., 2012). As emphasized earlier, the notion of community participation is not new in conservation and development interventions (Hulme and Adams, 2001, Brown, 2002). While participation is often presented in policy documents as a process of empowering and facilitating social change, in practice, the effectiveness argument predominates many early REDD+ interventions (Aguilar-Støen, 2015, Krause et al., 2013, Gebara, 2013, Awono et al., 2014).

The REDD+ introduction process in the Equateur province also falls short of best practice (see Lund, 2015). The information provided by the project organizer during the introduction process was undertaken using a conservation and development discourse (see Adger et al., 2001). This was troubling to the local people because issues about land rights and user rights were not prioritised. The project organizer had full control over the process and chose what information to

disseminate. This demonstrates the dimensions of powers that are exercised in participatory processes (see Lukes, 2005, Gaventa, 2006). The introduction process created local awareness, but did not convince them to give their consent to the REDD+ project. Local support for the project was based on limited information disseminated and trust in their leaders, who had consented to the project without full information. The introduction process was more of a consultation than a genuine effort to seek local consent. A consent seeking process requires well-informed decision making by local people and the signing of an agreement of intention that motivates both partners to engage confidently in the REDD+ process (Mahanty and McDermott, 2013).

This study finds that the project organizer and the customary authorities made the decision for the village to join REDD+ without any vote or signed agreement from the local people. However, such an introduction process can be both time consuming and costly (see Sunderlin et al. 2014). Thus, REDD+ projects, seemingly in order to avoid these costs, conduct a few days of consultation meetings, which end up providing only information that will motivate the local people to accept the project. This has been observed here, and in other similar studies of REDD+ processes (Resosudarmo et al., 2012, Nantongo et al., in review).

To characterize community participation in the REDD+ pilot project, it is important to assess the local institutional arrangements for project implementation. The main findings in this regard is that the REDD+ village organizations established by the project to create local awareness and implement REDD+ activities in the pilot sites, were unable to ensure full and effective community participation in the REDD+ project. First, although the idea to establish these village organizations came from the project organizer, they did not give space for self-organizing. The project organizer had full control of the process and decided how the organizations should be established. By controlling the organization process, the project organizer was faced with the dilemma to either strengthen or weaken existing local power structures embedded in customary institutions. Secondly, the mechanism used to create these REDD+ village organizations excluded women because the membership was drawn from head of households who are mainly men. This also illustrates the dilemma that WHRC face by trying to empower women in the REDD+ organization in the context of patriarchal domination. Thirdly, the organizations are still lacking the bylaws and internal regulations to function. Fourthly, local people do not know what project activities these village REDD+ organizations were established to facilitate and how they will do this.

The REDD+ project organizer also faced another dilemma by choosing to allow the customary authority and indigenous landowners to lead. The REDD+ village organizations ultimately decided to do so, probably in order to harmonize their activities with customary institutions. However, this decision strengthened the customary chief in the Bikoro pilot and gave him more control over the project than the other local people. This is happening because there is no decentralised local government structure in the DRC. Where such decentralized local government structures exist, like in Tanzania, they have been used to involve communities in REDD+ decision-making processes (Blomley et al., 2016, Mustalahti and Rakotonarivo, 2014). However, the absence of the REDD+ village organizations bylaws have enabled the customary chief in the Bikoro pilot, to capture and control the REDD+ activities.

The customary chief, as leader of the REDD+ village organization, controls all the information about the village REDD+ activities, organizes meeting about the project and invites his friends. Furthermore, the information about these meetings are not circulated to the entire village. Since downward accountability of customary authorities in the DRC is weak to non-existent (Nuesiri, 2012), chiefs exercise their authority in an autocratic manner. It comes as no surprise therefore that the village chief, who is president of the REDD+ village organization in Buya 1 village, is not accountable to the people. Furthermore, given that local people lack adequate information about the project activities, they are not able to influence or demand accountability from the customary chief.

The activities introduced had predetermined objectives, specific timeframes and ways of engaging the local people to manufacture success (see Lawlor et al., 2013). The local people were not included in deciding which activities to implement. The activities are linked to the project budget and timeframe and local people are only consulted in identifying potential activities, but not deciding which to establish or how they are implemented. In this light, community participation can be interpreted as a means to achieve the project outcomes—an instrument to increase project effectiveness. While participation can be a process of empowering and facilitating social change, the effectiveness model of participation motivates the REDD+ project in this study.

This dimension of participation, which serves as a means to achieve the REDD+ project objectives rather than to transform and empower local people in the process, limits local people's ability to influence the wider structural factors shaping their use of the forest. Local people are rendered passive consumers of predetermined goals and objectives about forests, rather than

makers and shapers of these goals and objectives as articulated by Cornwall and Gaventa (2000) and Williams (2004). Given the high level of poverty in the study area, participating in meetings to earn per diems and working as labourers in project activities provides financial relief to local people (especially the marginalized Batwa Pygmies), but their sense of inclusion in the project is very low.

CONCLUSION

This paper has shown that despite the rhetoric surrounding the value of community participation in REDD+ policy, programs, and project documents, the transformative dimension of participation as empowerment is not achieved in the REDD+ pilots. Participation as empowerment is often undermined by relations of power, both among the actors and within the institutional spaces of participatory processes. The introduction process associated with the REDD+ pilot project was not sufficient for local people to give their consent to – or reject – the REDD+ pilot project. Nevertheless, the local chief gave his consent to the project organizers and his local subjects did not oppose him despite many not being in agreement with him. Thus, the decision to join REDD+ was not participatory and was not democratic. This demonstrates the dilemma of introducing REDD+ in a context of weak ineffective democratic institutional arrangements. The information provided in the introduction process focused on conservation and development trade-offs, while issues of local interests like land rights and forest use rights were avoided. Perhaps most troublingly, it seems the control of information by the project organizer during the introduction process was a mechanism used to manipulate local people from opposing the REDD+ project.

Furthermore, the local institutional arrangements to enable full and effective community participation in REDD+ in Bikoro and Gemena REDD+ pilot projects in the DRC are weak and exclude women from participatory decision-making. The REDD+ village organization created by the project organizers are lacking bylaws and other functional regulations to guide their operations. Coupled with the lack of effective ways of disseminating information about the REDD+ project to the local population, this limits local people's ability to influence the leaders of the REDD+ village organization.

The REDD+ project was more concerned with effectiveness in project execution than with empowering the local communities. Thus, project goals, budget, timeframes, local partnerships and activities were externally decided without input from local people. The communities have

little or no control over the project; their participation does not go beyond labor supply and attending meetings for per diems to help alleviate their financial needs.

Using the Arnstein (1969) typology of participation, community participation in the studied REDD+ pilot projects is best characterized as 'tokenism'. Full and effective participation of local people in REDD+ implementation as prescribed in the REDD+ social safeguards would be difficult to achieve in practice, if social inequalities and local power dynamics are not recognized and addressed. REDD+, like other interventions, might further exacerbate these inequalities, adding insult to injury (Fraser 2008), already being suffered by vulnerable segments of local populations in poor forest dependent communities.

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